





Jerem: Rawson Esq.



*The
Mary Ann Beinecke
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CLARK
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Andrea Pozzo

Rules and Examples of Perspective

London, 1707

Sterling and Francine Clark Art Institute Library

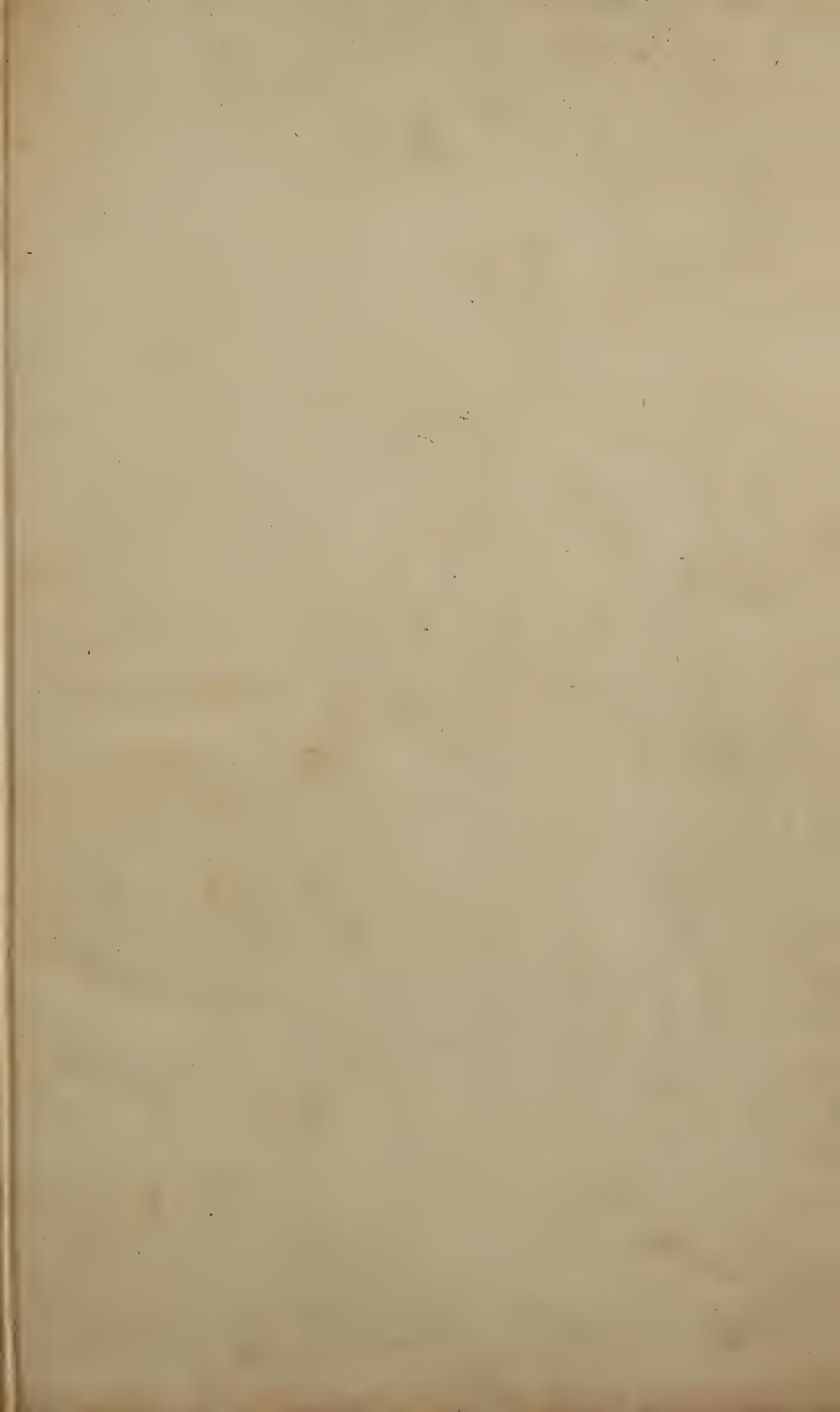
Gift of Mary Ann Beinecke

After a legal suit prevented the Jesuit order in Rome from constructing a dome on the church of Sant' Ignazio, Andrea Pozzo was commissioned to decorate its ceiling with a fresco. This painting, which still decorates the church today, is illustrated here in an engraving from Pozzo's treatise on perspective and architecture (originally published in Rome in 1693). While Pozzo gave the church its "dome," the ceiling remains completely flat! This illustration shows how Pozzo employed perspective to accomplish this masterpiece of illusion. It also presents us with his perception of architectural space, always based on the rules of perspective. Pozzo maintained this idea in the churches he built all over Italy and Austria and especially in Sant' Ignazio's grand theatrical interior. Pozzo's architectural theory was enormously influential, and his book was translated into all the major European languages, as well as Chinese, by 1738. It was also read by the great English architect, Sir Christopher Wren, who borrowed the Jesuit's ideas for many of his own buildings.











Rules and Examples of
P E R S P E C T I V E
PROPER FOR

Painters and Architects, etc.

In English and Latin:

Containing a most easie and expeditious Method to

DELINEATE in PERSPECTIVE

All DESIGNS relating to ARCHITECTURE,

AFTER A NEW MANNER,

Wholly free from the Confusion of Occult Lines:

BY THAT GREAT MASTER THERE OF,

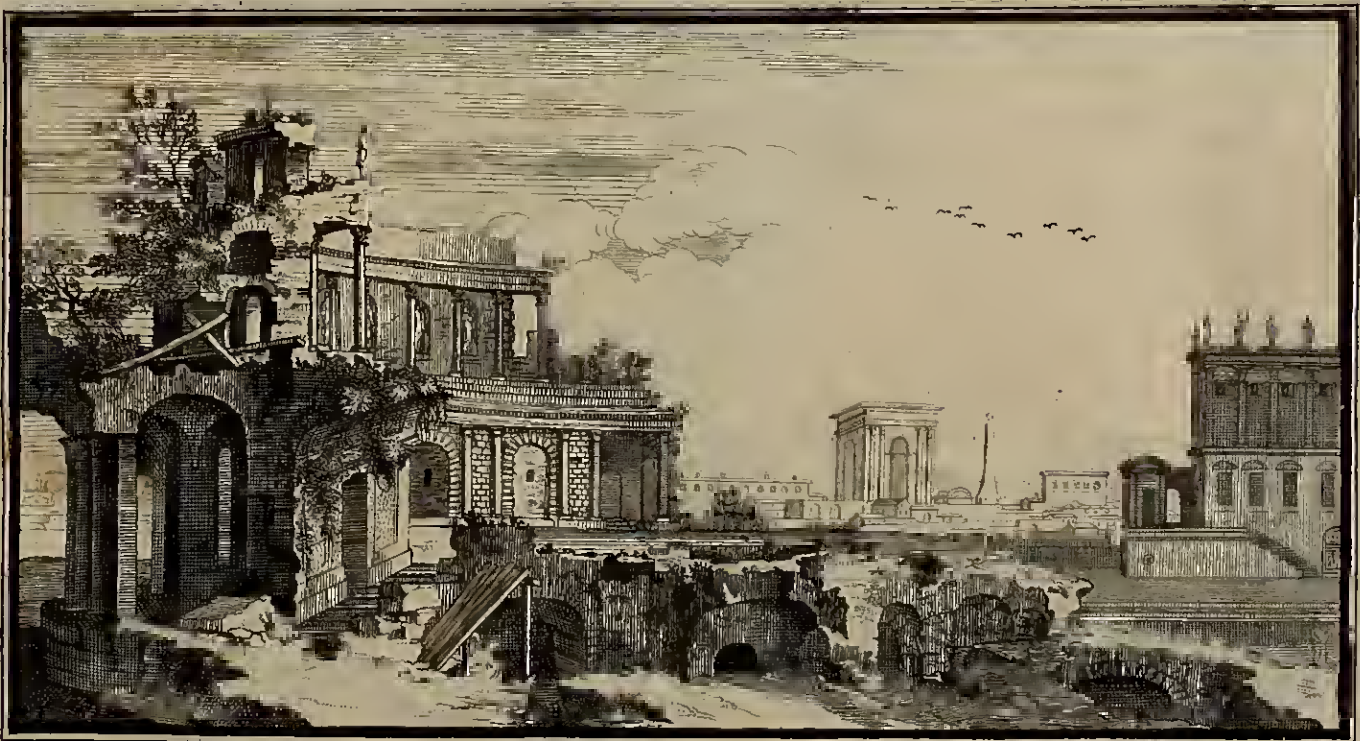
ANDREA POZZO, Soc. Jes.

*Engraven in 105 ample folio Plates, and adorn'd with 200 Initial Letters to
the Explanatory Discourses: Printed from Copper-Plates on y^e best Paper*

By John Sturt.

Done into English from the Original Printed at Rome 1693 in Lat. and Ital.

By M^r John James of Greenwich.



L O N D O N:

PRINTED by Benj. Motte, MDCCVII.

*Sold by John Sturt in Golden-Lion-Court in
Alderfgate-Street.*

THE HISTORY OF THE
LIFE

OF
THE

OF

OF

OF



OF

PERSPECTIVA
PICTORUM
ET
ARCHITECTORUM,
ANDREÆ PUTEI,
E SOCIETATE IESU.

In quâ docetur Modus expeditissimus Delineandi
Opticè omnia quę pertinent ad Architecturam.



L O N D I N I :

Juxta Exemplar ROMÆ excusum, M D C X C III.

Ex Sculpturâ Joannis Sturt, et ejusd. Curâ adornata:

TYPIS Benj. Motte, M D C C V I I .

WATERBURY

1850

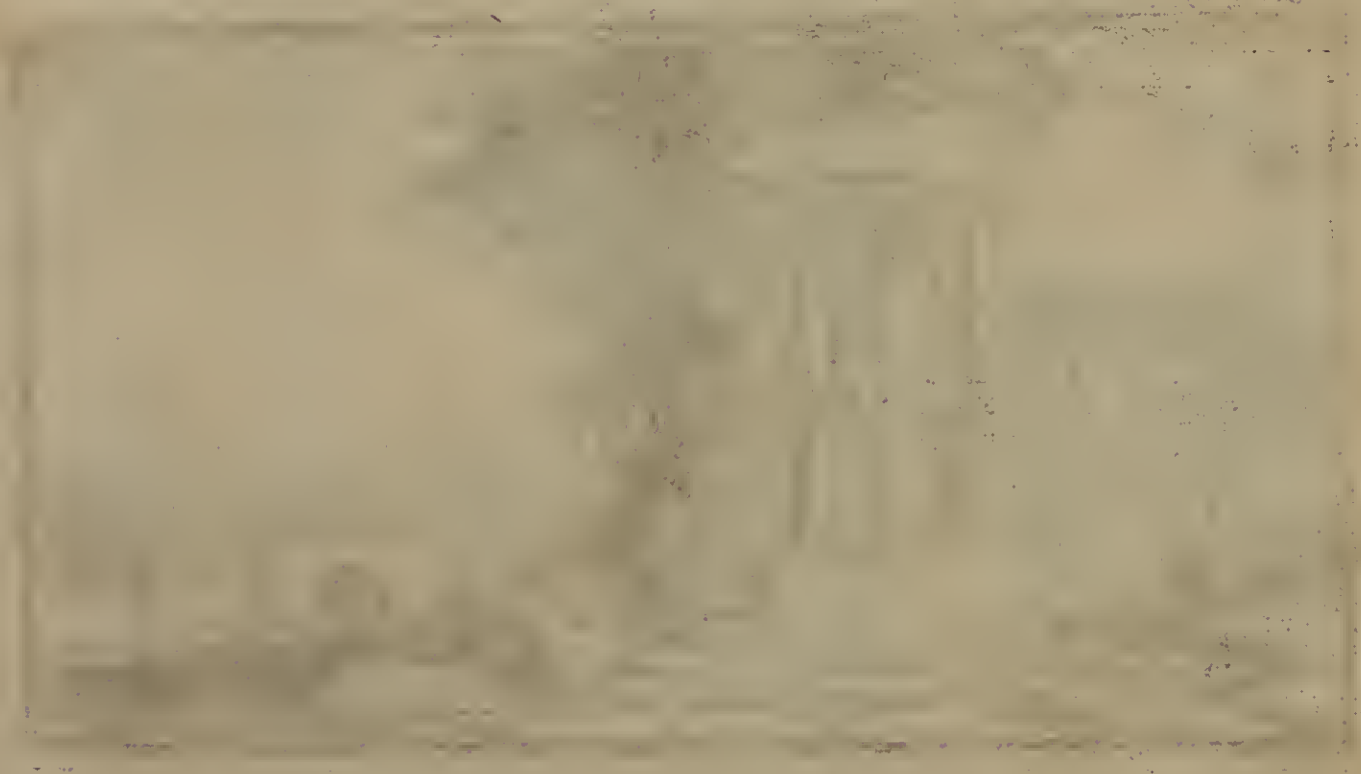
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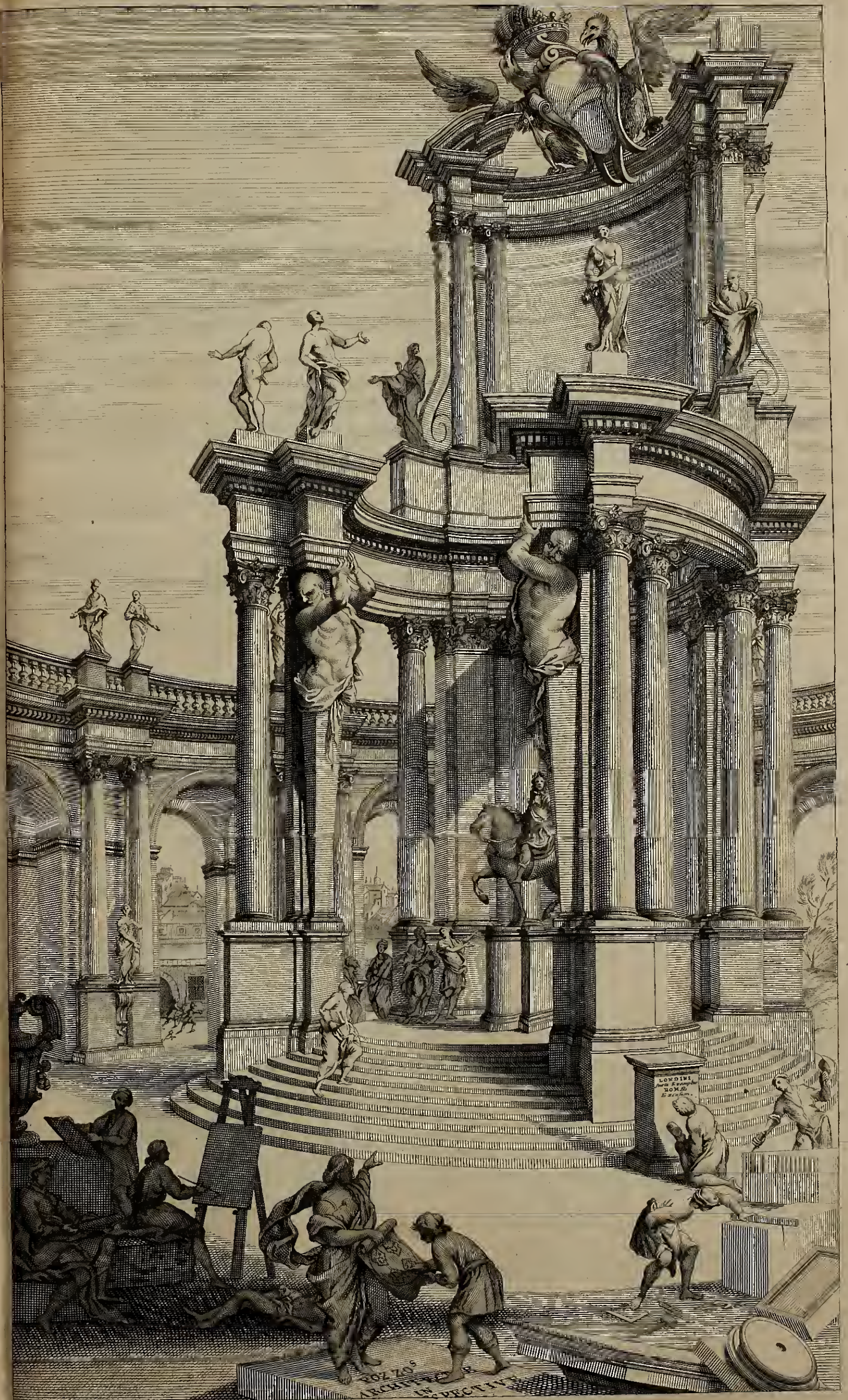


WATERBURY

WATERBURY

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WATERBURY



102 705
ARCHITECTURE
IN PERSPECTIVE

LOVONI
JACO KEMPLE
ROMA
1784



TO

Her most Sacred Majesty,

QUEEN ANNE.

May it please your Majesty!



THE Condescension of the late Emperor of Germany to patronize this WORK in the Original, could not have incited me to the Presumption of laying the Translation at Your Royal Feet; had not the Art of PERSPECTIVE, of which it treats, been so nearly ally'd

A

to

DEDICATION.

to the Noble Arts of PAINTING and ARCHITECTURE. The First of these Your Majesty has been pleas'd to honour, as well in expressing a Satisfaction with the Performances, as in extending Your Royal Munificence to that great Master thereof, Signor Verrio.

AND although Affairs of higher Consequence have hitherto deferr'd Your Majesty's Commands for Raising WHITE-HALL from its Ruins; yet has not Architecture been without Encouragement, under Your Majesty's Most Auspicious Reign: Witness the great Dispatch lately given to those Noble Fabricks of S. PAUL's, Greenwich-Hospital, and Blenheim.

THESE seem to presage, that a Time is coming, when, through the Blessing of Peace, and the Happy Influence of Your Majesty's Government; WHITE-HALL shall become a Structure worthy its Great Restorer, and its Name as much Celebrated among Palaces, as Your Royal Vertues are Illustrious among Princes: When Your Majesty's Subjects shall exert themselves as much to their Country's Honour, in the Arts of Design, and Civil Architecture; as they have already done in the Art Military, and Personal Valour.

PRELIMINARY to such Happy Season, I presume this Art of Perspective made Practicable, may not be improper; being One of the most Useful, though hitherto the most Obscure and Confus'd, of all the Lineary Arts.

I there-

DEDICATION.

I therefore, with all Submission, beg Leave to supplicate Your Majesty's Pardon for this Address, and Your Gracious Protection of this Specimen of English Graving; to which if Your Majesty vouchsafe Your Royal PATRONAGE, it will effectually animate the future Endeavours of,

May it please Your Majesty!

Your Most Obedient Subject,

J. STURT.

P R E F A C E

TO THIS TRANSLATION.



NOTWITHSTANDING the *Art* of PERSPECTIVE must be acknowledg'd so highly and indispensably requisite in the Practice of *Painting*, *Architecture*, and *Sculpture*; that in the First of these especially, nothing commendable can be perform'd without its Assistance: Yet such have been the Difficulties and Obscurities met with in the first Attempts, and so great the Perplexity and Confusion of Lines in the Practice thereof; that the best Instructions, hitherto made *English*, have invited very few to such a Prosecution of this Study, as might render their Performances of this kind, truly valuable.

'Tis something unaccountable, that, among so many learned Persons as have handled this Subject, *Priests*, *Architects*, and *Painters*; very few, if any of them, have given Directions proper for shunning that Disorder and Confusion of Lines, which, in most Instances, must necessarily attend the Execution of their Rules: In all or most of which, the whole Space for the Performance is confin'd between the Lines of the Plan and Horizon; which, where the Scale is small, and the Height of the Eye not very much advanc'd, renders the Work exceedingly confus'd; and where those Lines are coincident, (which frequently happens) the Method becomes utterly impracticable.

THIS Author's great Experience in the Practice of *Perspective*, having furnish'd him with excellent RULES for Shortning the Work, and Obviating the foremention'd Difficulties; he has here very generously imparted them, and especially the latter, in the Tenth and Eleventh Figures. And tho' on Perusal of the first three or four Plates, this Method may possibly seem the same that some others have before made use of; yet whoever shall diligently observe and copy the Rules and Examples of the succeeding Figures, must necessarily acknowledge the great Advantage this has in a Perspective-Plan and Upright, clear and distinct; whence the finish'd Piece is deduc'd, without the least Incumbrance of the Work. The Explanations of the Rules here given, are short and instructive; and the Architectonical Designs produc'd to exemplify them, Noble and Magnificent.

THE Manner of Designing, where the Perspective is drawn on several Ranges of Frames one behind the other, and such Scenes of Theaters whose Grooves lie oblique to the middle Line, is also here laid down: And by our Author's Method, *Horizontal Perspective*, or that of Ceilings, is render'd less difficult than the *Vertical*, or that against

P R E F A C E.

an upright Wall. Upon the whole, nothing seems wanting that may make a Work of this nature complete; unless what concerns Designs which are either Circular, or abound with many Columns: For the Performance whereof, the Author, as he promises in the Sixty-fifth Figure, has, in a SECOND Volume, given a Rule more proper for the purpose; which also may possibly be made *English* in due time, if this Part meet with Encouragement.

WHAT the Author once intended should make a Part of that Second Volume, he afterwards inserted in the Ninety-third and following Figures of this Book: In the last of which, particular Notice should be taken of his Conclusion; *That if Painters would not run into inextricable Errors, they ought as strictly to observe the Rules of Perspective, in designing the Figures of Men and Animals; as they do in painting Columns, Cornices, or other Parts of Architecture.*

THAT none therefore be discourag'd in their first Attempts, through the Brevity or Silence of our Author; (who, writing in a Country where the Principles of this Art are more generally known than with Us, had no need to insist so long on some things, as might be thought necessary to *Beginners*) we shall endeavour to speak as plainly as we can to a point or two, most liable to be misunderstood, or to prove a Stumbling-Block at the Entrance; and then add a Word of Advice to such as shall attempt the putting these Rules in Execution.

THE Author, in both his Explanations of the first Plate, has given some Account of what he would have his Reader understand, by *Designing in Perspective*; and a right Conception of this point being of great Use to facilitate the Work, we thought it not improper, to describe something more particularly, what is meant by the Art *Perspective*: but shall at present speak only of That, which, whether Vertical or Horizontal, is receiv'd on a Flat and Even Superficies; This being of much the more general Use, and, when rightly understood, renders the Difficulties of the Circular or Irregular Surfaces, easy and familiar.

PERSPECTIVE is the Art of Delineating, on a flat Superficies, as a Wall, Ceiling, Canvas, Paper, or the like, the Appearances of Objects, as seen from One determinate Point: For tho' in Works of great Length, Two, Three, or more Points of Sight are sometimes made use of; yet such may more properly be said to be Several Views conjoin'd, than One Piece of Perspective: Of which see the Author's Opinion, at the End of this Treatise.

IN Perspective, the Eye of the Beholder is esteem'd a Point, from whence Rays are suppos'd to proceed to every Angle of the Object. The Wall or Canvas to be painted (which we shall here call the *Section*) is imagin'd to intervene at right Angles to the Axis of the said Rays, and, by dissecting them, to receive the Appearance of the Object, in greater or less Proportion, as the Section is more or less remote from the Point of Sight. Our Author's Rule is, That the Distance of the Eye ought to be equal to the greatest Extent of the Object, whether in Length or Height: As, to view a Building that is a
hundred

P R E F A C E

hundred Foot long, and fifty high ; he would have the Distance a hundred Foot : To view a Tower sixty Foot wide, and a hundred and fifty Foot high ; the Distance should be a hundred and fifty Foot. This Distance is not strictly to be understood of the Space between the Eye and the Object, but of the Space between that and the Section, the Plan of which our Author calls the Line of the Plan, or Ground-line ; for it's often requisite, that the Section be plac'd at some Distance before the Object, on account of Projectures of Cornices, and other Parts of the Work that advance, as in the Eighth Figure.

THE Place of the Eye, with respect to its Height above the Ground, ought to be such, as is most natural and agreeable to the Object. Thus in *Architecture*, the Basements and inferior Parts of a Building are improper to be set above the Eye, and their Cornices and Entablatures have but an ill Effect when below it. *General Perspectives* indeed require the Sight to be taken at a Birds View ; and on other Occasions the Place of the Eye may be vary'd : but the best and most general Rule is, not to exceed five or six Foot Height above the Ground. The Height of the Eye above the Ground, thro' which a Line is drawn, call'd the *horizontal Line*, is set on by the same Scale of Proportion, as the Design bears to the real Work ; and the Point of Sight so plac'd therein, as may render the Object most agreeable. From the Point of Sight, either on one or both sides in the horizontal Line, you are to set, by the same Scale, the Distance you stand from the Section. And by means of these Points of Sight and Distance, and the Measures of the Parts brought on the Lines of the Plan and Elevation of the Section, by the same Scale ; all the Examples of this Volume are reduc'd into Perspective ; as is manifest on Inspection of the Figures.

WHAT we would add, by way of Advice, is,

I. THAT you very carefully observe, what the Author understands by *Breadth*, *Length*, and *Height*, in his Explanation of the Fifth Plate, before you proceed to practise on any Figure ; otherwise you'll certainly misunderstand him ; especially in the Third Figure.

II. THAT the Rules of the Tenth and Eleventh Figures be particularly regarded, for avoiding Confusion in the Plans and Uprights.

III. THAT from the Disposition of the Perspective-Plans and Uprights, with respect to the finish'd Pieces in the Twelfth and many following Figures, you would observe, with what Dispatch the said Pieces may, without the Help of Compasses, be delineated by your Drawing-Square ; viz. the Perpendiculars from the Perspective-Plan, and the level Lines from the Perspective-Upright, or Section.

IV. THAT you would accustom yourself in Works that have many Lines, to make the Perspective-Plans and Uprights for each Part distinct, so as to prevent all Danger of Confusion. Thus you may have one Plan and Upright for the Basement of a Building ; and when that is drawn on your finish'd Piece, remove them, and place those of the Body of the House ; and when that's complete, do so by the *Attick*, &c. always observing so to place the Plan below, and the Upright on one side of your neat Draught,
that

P R E F A C E.

that your Drawing-Square may command each of them ; which will mightily shorten your Work.

V. **T**HAT the Author's Advice of taking the Figures in Course, be strictly follow'd in the Practice ; which will be a great means to render the Whole easy and pleasant.

THIS is the Sum of what we thought most proper to advertise you ; and have only this farther to request, That if any Mistakes may have escap'd the Press undiscover'd, as we well hope there are few or none, you will favourably correct and pardon them.

MONITA

MONITA ad TYRONES.



INCINNITATEM ac Symmetriam optica delineationes edificiorum habere nequeunt, nisi utramque mutuentur ab Architectura. Proinde necesse est, ut in istius graphide ac intelligentia te aliquandiu exerceas, donec uniuscujusque elevationis vestigium formare didiceris, ex eoque eruere sectionem totius longitudinis, ut in Opere toto videre est, præsertim figuris sexagesimaoctava & septuagesima. Siquidem ex vestigio & ex sectione derivatur in opticas imagines congrua rerum singularum profunditas.

Subjiciam his consilium summi momenti ; videlicet, egregiè intelligas oportet figuram secundam, priusquam progrediaris ad tertiam, idemque de cæteris dictum velim ; nam singulas eo disposuimus ordine, ut quæ præcedit, necessaria sit ad percipiendas eas quæ sequuntur. Si aliqua sint in explicatione, quæ initio non intelligas, ipsum schema sæpius diligenter inspicias ; ac vicissim si aliqua desint in schematibus, ex declarationibus ea supplebis. Lapsus verò quos deprehenderis, facilè pro tua benignitate, mihi, ut spero, condonabis.

ADVICE to BEGINNERS.



THE Perspective of Structures here treated of, can have no Grace or Proportion, without the Help of Architecture. 'Tis therefore absolutely necessary, that you employ yourself for some time in Drawing, and the Study of that Art ; till you can readily describe the Plan of any Upright, and from thence project the Section or Profile, as is shewn through the whole Course of this Work ; and more particularly, in the Sixty-eighth and Seventieth Figures : Forasmuch as the proper Depth of each Part of the Perspective, is determin'd by the Plan and Profile thereof.

I shall add this one thing more, which is indeed of the last Importance ; to wit, that you endeavour to understand the Second Figure thoroughly, before you proceed to the Third ; and so of the rest : they being dispos'd in such Order, that the Knowledge of the preceding Figure is always necessary to a right Understanding of that which follows. If you meet with any thing which at first seems difficult in the Description, a diligent Inspection of the Figure may relieve you : And on the other hand, if you find not in the Figure every thing you desire, you may have Recourse to the Explanation. What Errours you discover in the Work, I hope you'll generously overlook and pardon.

Lectorem Perspectivæ studiosum.



RS Perspectiva, oculum, licet sagacissimum inter sensus nostros exteriores, mirabili cum voluptate decipit; eademque necessaria est iis, quibus in pingendo, tum singulis figuris positionem ac deformationem suam congruè tribuere, tum colores & umbras, magis vel minus intendere aut remittere, prout oportet, curæ est. Ad id autem sensim sine sensu illi perveniunt, qui solo studio Graphidis non contenti, singulis Architecturæ Ordinibus exactè deformandis assueverint. Nihilominus, inter multos qui opus hujusmodi magno impetu aggressi hucusque fuerunt, paucos numeramus, qui animum ipso statim initio non desponderint, ob magistrorum librorumque penuriam, ordinatè ac perspicuè docentium opticas projectiones, à principiis hujus artis, usque ad omnimodam perfectionis consummationem. Quum autem sentiam, longâ multorum annorum exercitatione, me non minimam facilitatem in hac disciplina mihi parasse: censeo Studiosorum voluntati me satisfacturum, eorumque profectui consulturum, si methodos expeditissimas in lucem proferam, ad singulorum Architecturæ Ordinum opticas delineationes perficiendas, adhibitâ communi regulâ, ex qua omnia linearum occultarum offendicula sustulimus. Deinde, si tempus & vires ad aliud Opus conscribendum Bonitas Divina dederit, projectiones quascunque absolvemus regulâ qua in presentia uti soleo, ac multò facilior & universalior est regula communi & vulgata, quamvis hæc sit fundamentum alterius. Itaque, Lector studiose, constanti animo negotium tuum suscipe; ac lineas omnes tuarum operationum, ad verum oculi punctum ducere, ad gloriam scilicet DEI O.M. tecum omninò decerne. Sic votis honestissimis, ut auguror tibi ac spondeo, feliciter poteris.

T O

The Lovers of Perspective.



HE Art of PERSPECTIVE does, with wonderful Pleasure, deceive the Eye, the most subtle of all our outward Senses; and is very necessary to be known of all, who in Painting would give a due Place and Proportion to their Figures, and more or less Strength requisite to the Lights and Shades of the Picture. This might be insensibly attain'd, if Persons, not content with the Study of Drawing only, would accustom themselves exactly to delineate the several Orders of Architecture. Nevertheless, among many who have hitherto vigorously undertaken this Work, there have been but very few, who have not been in a manner quite discourag'd, through want of Masters and Books to teach them clearly and methodically the Rules of Perspective-Projections, from the first Principles of the Art, to the entire Perfection thereof. Wherefore, apprehending that by long and constant Practice in Works of this kind, I had acquir'd a Method to facilitate the same; I judg'd it might be for the Satisfaction and Advantage of the Studios, to publish the shortest way for designing in Perspective the several Orders of Architecture, by a common and easy Rule, free from the Incumbrances of occult Lines. But if it please God to give me Life and Health to compose another Book, I shall therein shew the Method of putting Works into Perspective by the Rule I make use of at present, which is more easy and general than the common way, though this be the Foundation of the other. Therefore, Reader, my Advice is, that you chearfully begin your Work, with a Resolution to draw all the Lines thereof to that true Point, the Glory of GOD; and I durst predict, and promise you good Success in so honourable an Undertaking.


THE

Approbation of this Edition.



The Request of the Engraver, We have perus'd this Volume of PERSPECTIVE; and judge it a WORK that deserves Encouragement, and very proper for Instruction in that ART.

*Chr. Wren,
J. Vanbrugh,
N. Hawksmoor.*



Vides tabellam rectangulam A, cuius
agglutinata est pagina et regulam
B quæ cum affere transverso normam
componit: Si applices affertem late-
ribus tabellæ, regulâ desuperabis
quocumque volueris lineas pa-
rallelas aut normales.

A

On the Table A exactly squar'd, as
you see here, fix the Paper, and
the Rule B, having a Cross-stock
serves as a Square, by the applica-
tion of which Stock to the Sides
of the Table, you draw by the
Rule what Parallel or Perpen-
dicular Lines you have a mind
to.

B

P O Z Z O's

ARCHITECTURE

I N

PERSPECTIVE.

FIGURA PRIMA.

Explicatio linearum Plani & Horizontis, ac Punctorum
Oculi & Distantiæ.



T principia Perspectivæ facilius intelligas, pono tibi ob oculos Templum, in cujus interiori facie, præter cetera, pingendum sit aliquid ad Perspectivam pertinens. Templi hujus vestigium geometricum est A, elevatio geometrica in longum est B, in latum est C. In A est locus Hominis aspicientis lineam DE, cui paries pingendus incumbit. In B idem Homo ex eadem distantia intuetur lineam FG, qua refert elevationem parietis. In figura C supponimus Hominem consistere è regione ipsius parietis: easdemque proportionibus mensurarum translatis esse ex vero pariete in figuram C, quæ ipsum in parvo representat.

Prima ergo linea HI dicitur linea terra vel plani, ex quâ incipit, eidemque incumbit edificium. Secunda linea NON priori parallela, dicitur horizontalis, in quâ ponitur O punctum oculi, & N punctum distantia. Duo autem puncta distantia à nobis posita sunt, ut unum adhibeas ex quâ parte volueris; nam ad figuras opticè contrahendas sufficit unum punctum distantia: nec fieri potest ulla optica delineatio, quin primo loco designentur due parallela, una plani seu terra, altera horizontis, notando in lineâ horizontis, punctum oculi, seu opticum, & punctum distantia. Porro unam eandemque rem triplici Schemate representare oportuit, ut videas, locum ex quo aspicienda est figura C esse punctum N unius ex rectis NO, quam concipere debemus veluti normaliter infixam in O; ac distantiam inter O & N eandem esse debere cum distantia inter A & DE, inter B & GF.

In picturis multum spatii occupantibus, punctum oculi poni solet in medio lineæ horizontalis: atque ubi altitudo picturæ sit major latitudine, distantia NO fiet equalis altitudini. Si latitudo picturæ sit major altitudine, distantia NO fiet equalis latitudini; ita enim unico intuitu totum picturæ spatium comprehendere poterit. Porro quantumvis eadem distantia diverso modo adhibeatur in vestigio A, & in elevationibus B & C; nihilominus sectiones visualium cum pariete vestigii A, & elevationis B, omnino conspirant cum sectionibus visualium figuræ C.

Jam si velimus ut spectatori in A & B paries depictus videatur distare à lineis DE & GF, quanta est longitudo quadrati P, cujus elevatio est Q; ex punctis A & B fiant visuales ad puncta extrema quadrati, notando sectiones visualium cum pariete DE & GF, qui ab aliis vocatur velum, vitrum diaphanum, sectio, tela, vel tabula. Invenies autem, lineas RS ac TV esse æquales, ac similiter lineas XZ & YK; & sic de aliis.

The First Figure.

Explication of the Lines of the Plan and Horizon, and of the Points of the Eye
and of the Distance.



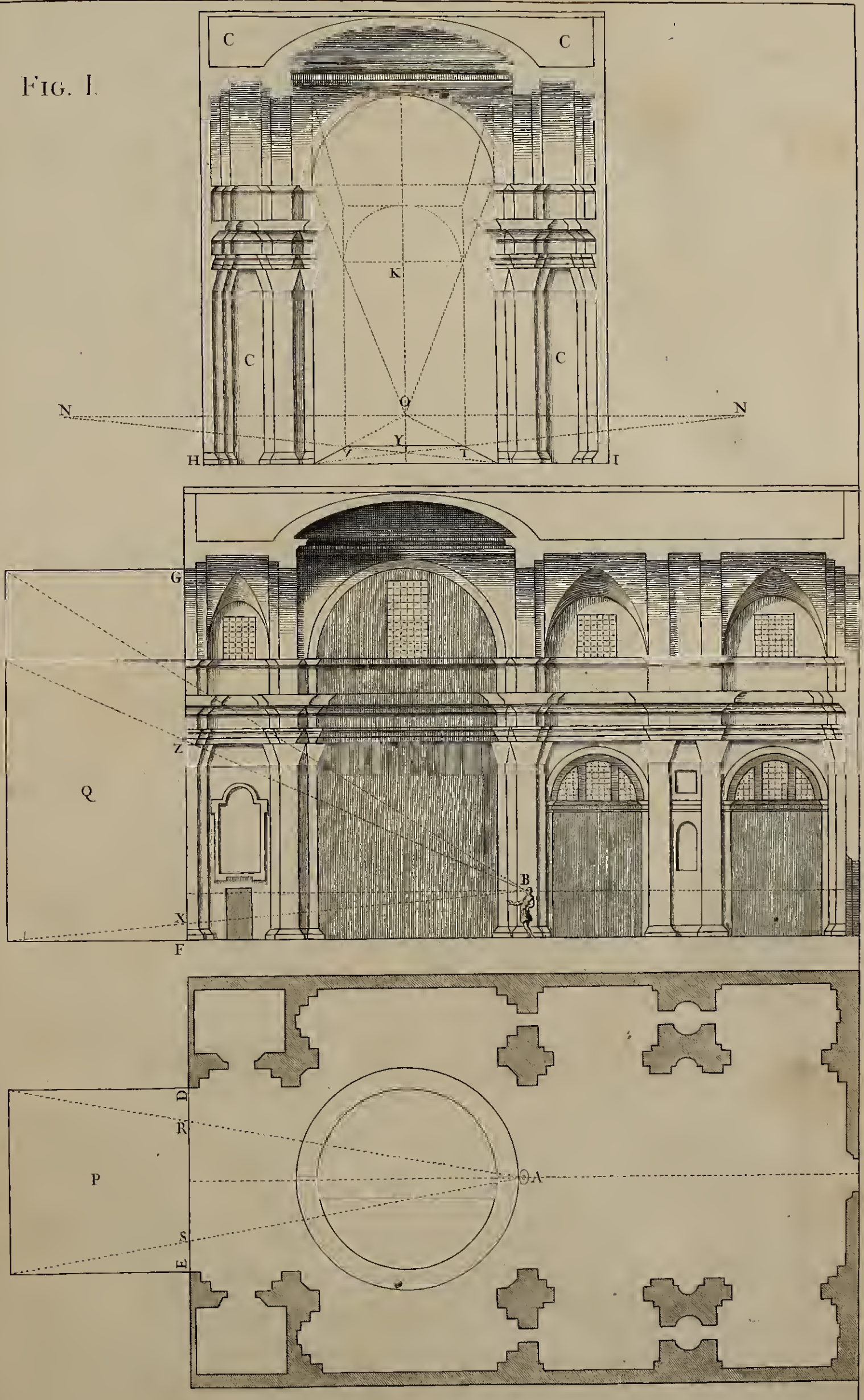
HAT you may the better understand the Principles of Perspective, here is presented to your View a Temple, on the inner Wall of which, amongst other things, one would paint something in Perspective. The Geometrical Plan of this Church is A, the Geometrical Elevation, or Upright, lengthwise is B, breadthwise is C. In A is the Place from whence a Man beholds the Line DE, which is the Plan of the Wall that is to be painted: In B the same Man, from the same Distance, looks upon the Line FG, that represents the Elevation of the Wall. In Fig. C, the Man is supposed to stand opposite to the said Wall; and this Figure contains, in Little, the very same Proportions of Measures transferr'd from the real Wall.

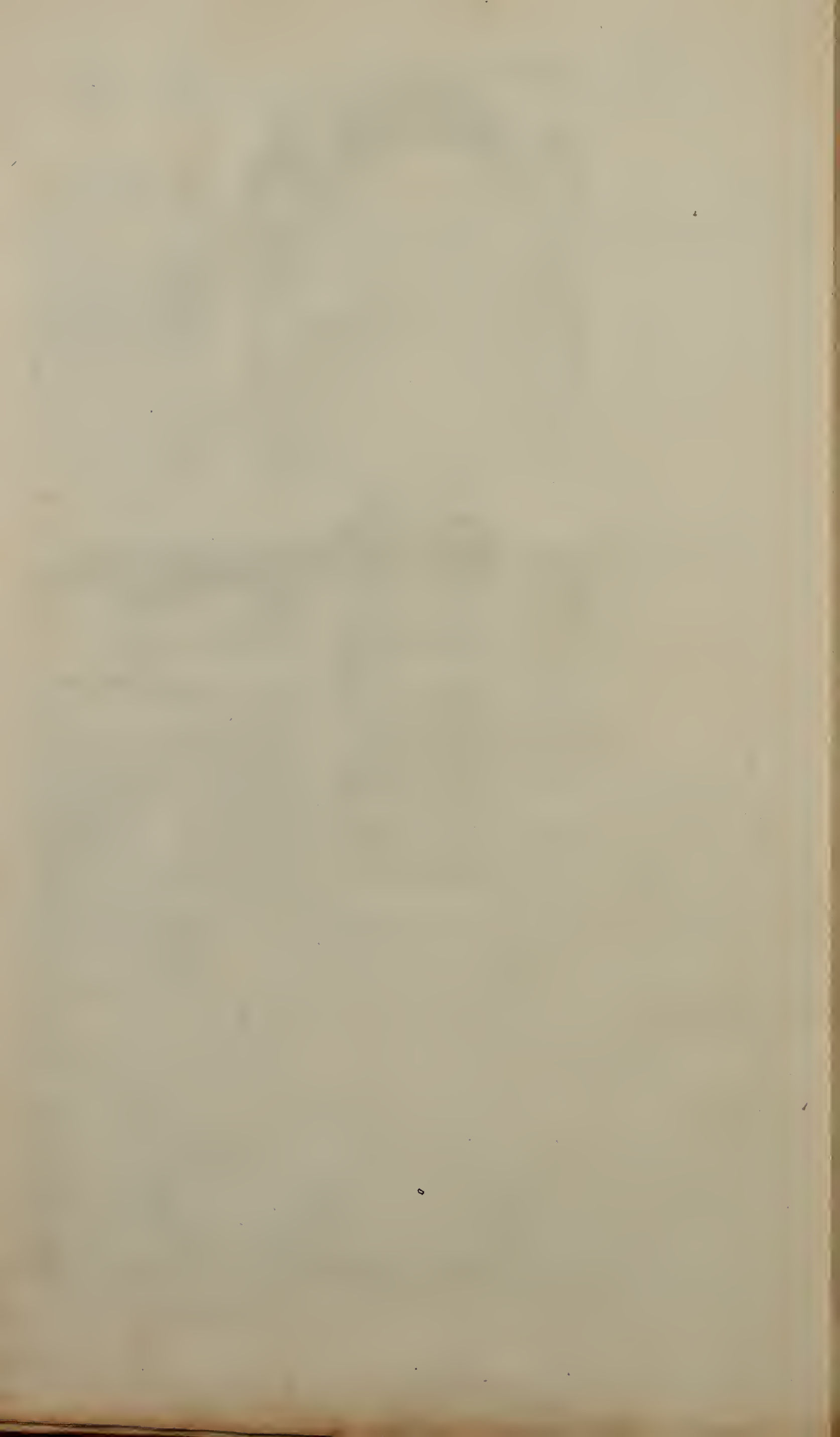
The first Line therefore HI is call'd the Ground-line, or Line of the Plan, at which the Edifice begins, and on which it stands. The second Line NON, parallel to the former, is call'd the Horizontal Line, wherein is plac'd O the Point of the Eye, and N the Point of the Distance. Two Points of Distance are here laid down, that you may make use of which you please; for that on one Side only is sufficient for the fore-short'ning Figures in Perspective: Neither can any Optick Delineation, or Perspective, be described, without first making two Parallels; one of the Plan, or Ground-line, the other of the Horizon; marking, in the Line of the Horizon, the Point of the Eye, or Sight, and the Point of Distance. It was thought besides expedient to put one and the same Thing into three Schemes or Designs, to let you see, that the Place, from which the Figure C is to be look'd upon, is the Point N, one of the right Lines NO, which must be conceived as fixt at right Angles into O; the Distance ON being the same as that between A and DE in the Plan, or between B and GF in the Upright.

In Pictures taking up a great deal of Room, the Point of Sight ought to be made in the middle of the Horizontal Line; and where the Height of the Picture happens to be greater than the Breadth, the Distance NO must be made equal to the Height. If the Breadth of the Picture exceed the Height, the Distance NO must be made equal to the Breadth: For so will the Extent of the Picture be the better comprehended, or receiv'd, at one View. And altho' the same Distance may seem to be used in a different manner in the Plan A, and in the Elevation B, from what it is in C; nevertheless the Sections of the visual Rays, with the Wall of the Plan A, and of the Elevation-B, have a perfect Correspondence with the Sections of those of the Figure C.

Now, if to the Spectator in A and B, we would have the farthest Part of the Work seem to recede from the Lines DE and GF, as much as the Square P does, whose Elevation is Q; draw from the Points A and B, the visual Rays to the extreme Points of the Square P and Q; noting the Sections they make with the Walls DE and GF; which by some is call'd the Veil, Transparent Medium, Section, Cloth, or Table: and you'll find RS equal to TV, XZ equal to YK; and so of the rest.

FIG. I.







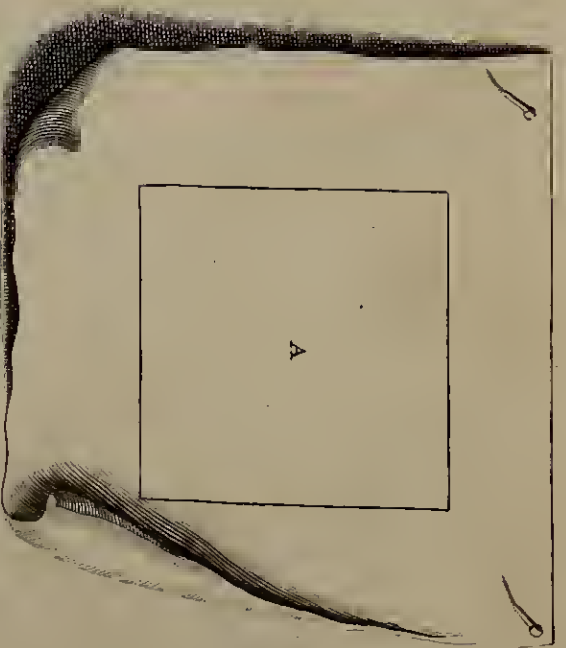


FIG. II.

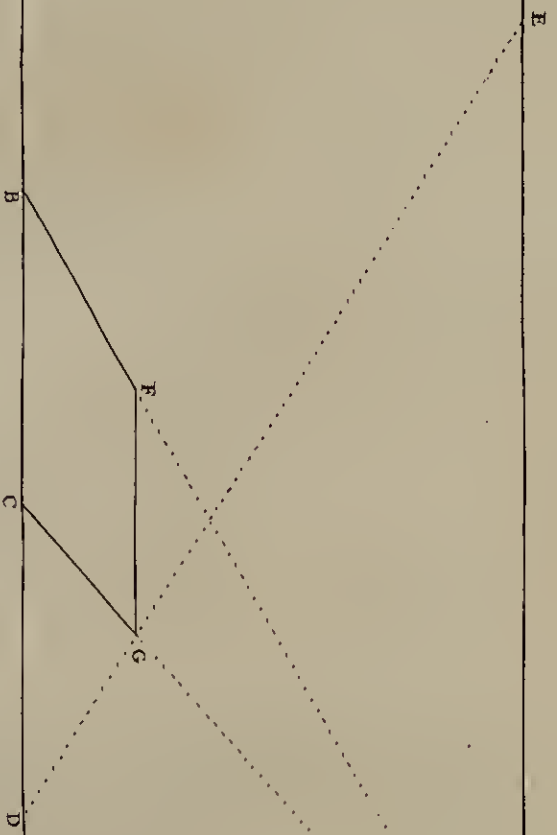
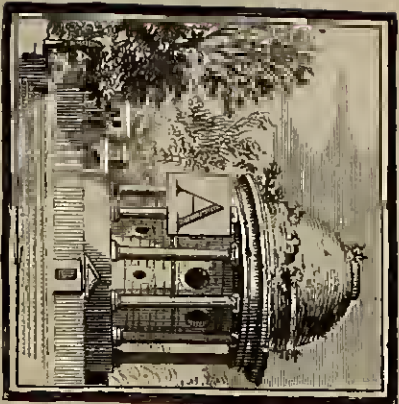


FIGURA Secunda.

Modus delineandi opticè Quadratum.



NOTE descriptionem opticam quadrati A, quod fingimus delineatum esse in papyro separata, ducenda sunt duæ lineæ parallele, altera plani, altera horizontis, ut iam docuimus; notando in linea horizontis punctum oculi O, et punctum distantie E. Tum translata in lineam plani latitudine ac longitudine ipsius quadrati A, ita ut linea CB sit equalis latitudini, et DC sit equalis longitudini. Ex punctis B et C sunt visuales BO, CO ad punctum oculi; ex puncto D fit recta DE ad punctum distantie. Denum ubi visualem CO secat recta DE, fit GF parallela ad CB; habesque quadratum opticè contractum.

Compendium temporis et laboris facies, præsertim in schematibus quæ abundant lineis, si chartulam in medio complicaveris, eademque utaris, ut latitudinem ac longitudinem quadrati transferas in lineam plani.

The Second Figure.

Manner of delineating a Square in Perspective.

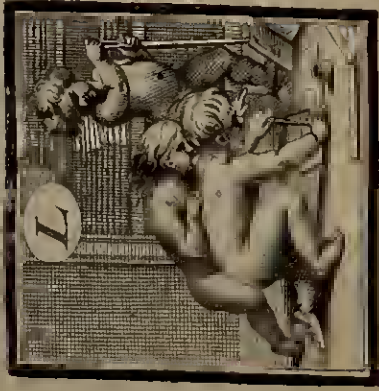


BEFORE the Square A, which is supposed to be drawn on a separate Paper, can be laid down in Perspective, two parallel Lines must be drawn; one of the Plan, the other of the Horizon, as is already intimated; noting in the Horizontal Line the Point of Sight O, and the Point of Distance E. Then, when the Length and Breadth of the Square A shall be transferr'd into the Line of the Plan, so that the Line CB be equal to the Breadth, and DC be equal to the Length, let the visual Lines BO, CO be drawn from the Points B and C to the Point of Sight O, and the right Line DE from the Point D to the Point of Distance. Lastly, where the Line DE cuts the Visual CO, make GF parallel to CB: and you have the Square Optically contracted, or fore-shorten'd in Perspective.

To spare Time and Pains, especially in Figures that abound in Lines, fold your Paper in the middle, and make use of it to transfer the Breadth and Length of the Square, into the Line of the Plan.

FIGURA TERTIA.

Optica delineatio rectanguli, alterâ parte longioris.



Atitudo BC rectanguli A ponatur in linea plani, adhibito circino, vel chartulâ complicatâ; & ex punctis B & C fiant visuales ad O, punctum perspectivæ. Tum papyro ex altera parte iterum complicatâ, notetur longitudo CD rectanguli; ducendo tum rectam DE ad punctum distantie, tum rectam FG parallelam ad BC, quæ complebit opticam delineationem rectanguli.

Alterâ figura ostendit complicationem cruceformem papyri, quæ adhiberi potest in delineandis rectangulis, seu latitudo eorum sit major longitudine, aut vice versâ; seu latitudo & longitudo sint æquales.

The Third Figure.

The Delineation of an Oblong Square in Perspective.



ET the Breadth BC of the Square A, be plac'd in the Line of the Plan, by the Compass, or a folded Paper, and from the Points B and C, make the Visuals to the Point of Sight O. Then fold your Paper cross-wise, and mark CD the Length of the Square, drawing the Line DE to the Point of Distance, and the Line FG parallel to BC, which will complete the Optick Delineation of the oblong Square.

The other Figure shews the Folding of the Paper cross-wise, which is of ready use in delineating Squares, whose Breadth exceeds their Length, or *vice versâ*; or whose Length and Breadth are equal.



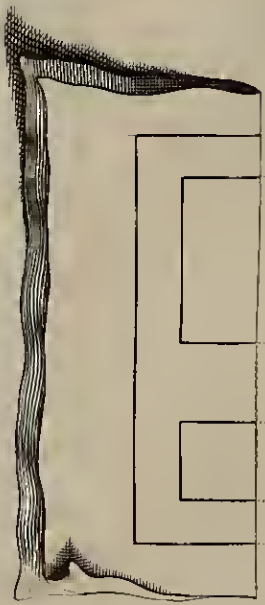
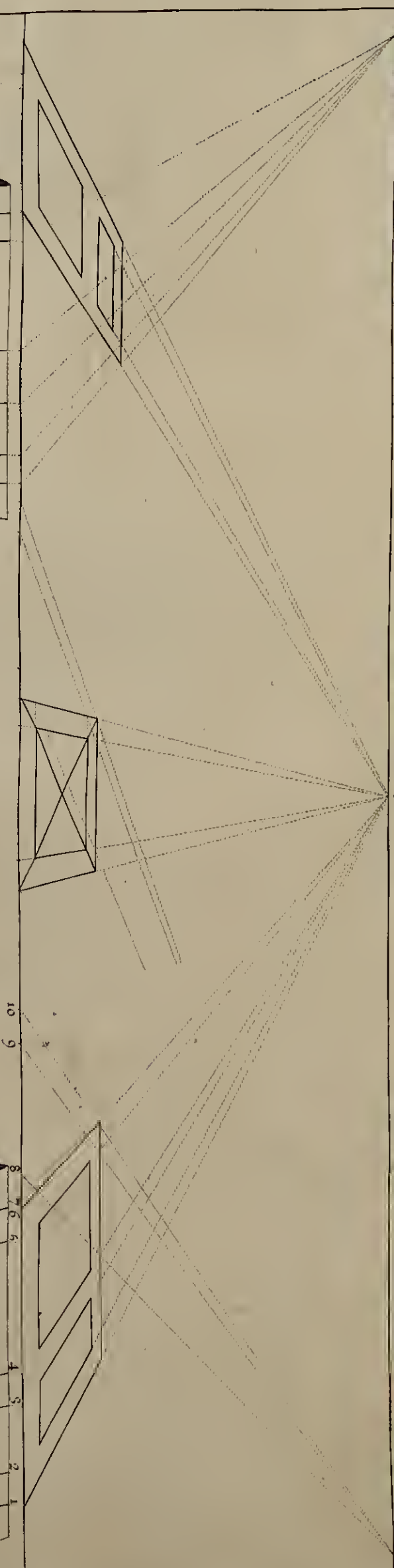
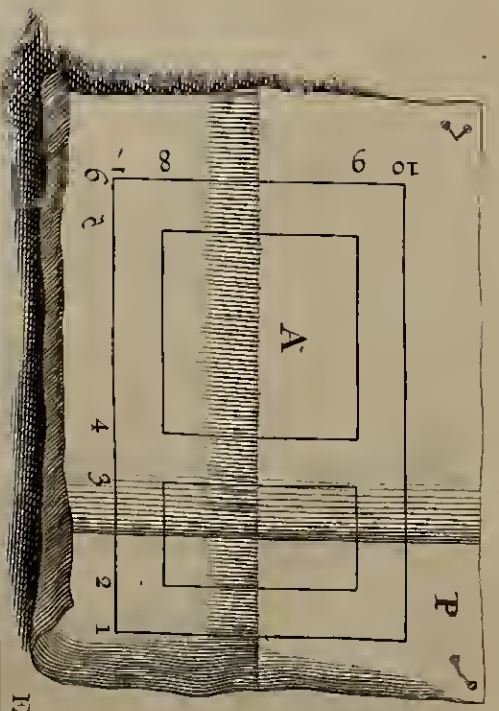
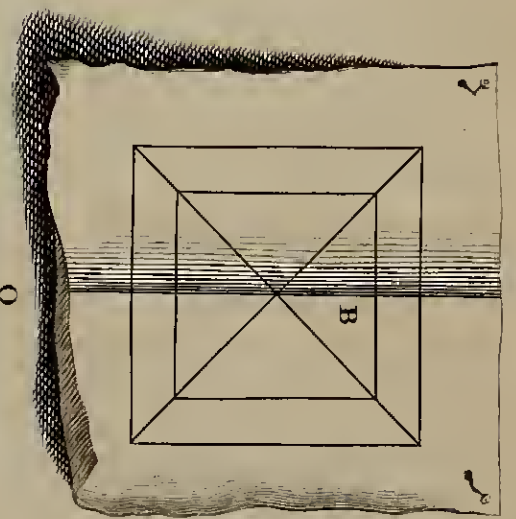
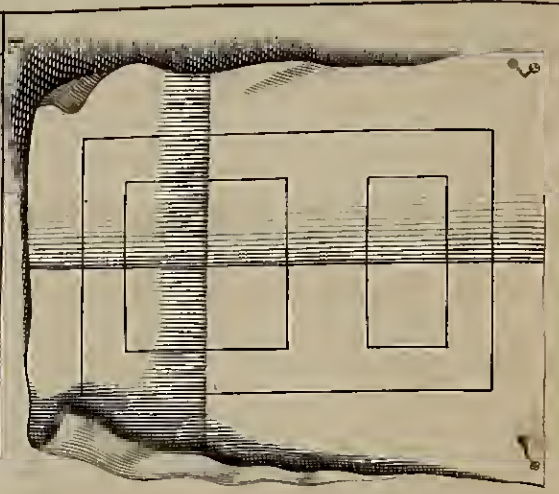


FIG: IV.

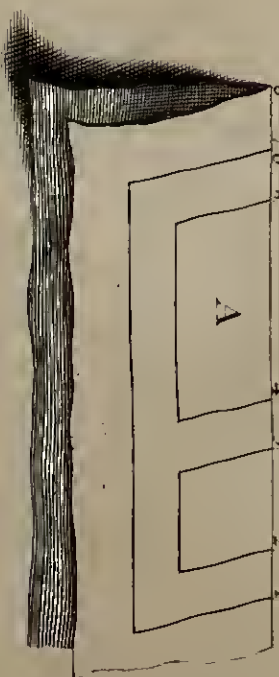
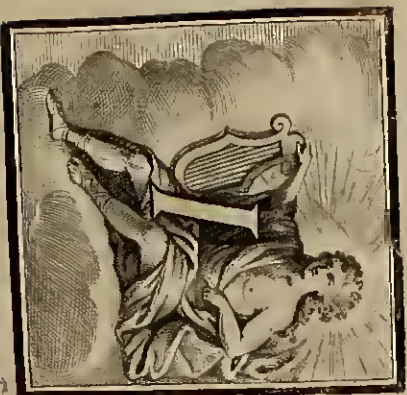


FIGURA QUARTA.

Optica descriptio quadrati duplicis.



A M incipies sruu compendio pa-
pyri complicata. Nam eam
admovendo lineæ plani, nullo
negotio notare poteris puncta
1, 2, 3, 4, 5, 6, linearum vi-
sualium, quæ ducentur ad *O*
punctum perspetivæ. Exinde complicatâ rur-
sum chartulâ in crucem ad *P*, notabuntur hæc
puncta; 7, coincidens cum puncto 6, nisi qua-
dratum distet à lineâ plani; 8, 9, 10. Ductis
autem rectis ex 8, 9, 10, ad punctum *E*, ubi se-
cant visuales 6, 7, fient parallela, eritque com-
pleta delineatio.

*In medio quadrati B, aliud quadratum facile
describetur, ducendo diagonales seu diametros ab
angulo ad angulum, ut in figura.*

The Fourth Figure.

The Optical Delineation of a double Square.



E R E you'll find the Ad-
vantage of your folded Pa-
per; for, applying it to the
Line of the Plan, you rea-
dily mark the Points 1, 2,
3, 4, 5, 6, of the visual
Lines, which must be drawn to the Point of
Sight *O*. Then folding the Paper cross-
wise, as in *P*, you mark the Points 7, 8, 9,
10, placing the Point 7 on that of 6, un-
less you would have the Square removed
within the Line of the Plan. Then from
8, 9, 10, drawing Lines to the Point of
Distance *E*; where they intersect the Line
6, 7, *O*, draw Parallels to the Line of the
Plan; and your Work is done.

Within the Square *B*, you may easily
inscribe another Square, by help of the Di-
agonals; as may be seen in the Figure.

FIGURA QUINTA.

Vestigia quadratorum, cum elevationibus.



UPPOSITIS iis quæ jam diximus de Contracti-
one optica Quadratorum, notandum est, vestigiis
primi Quadrati distare à linea plani spatii BA opti-
cè contracto; quia linea BD habet à visu-
ali AO, distantiam BA. Eodem modo Quadratum
secundum distat à linea plani spatii EA, & sic de-
inceps.

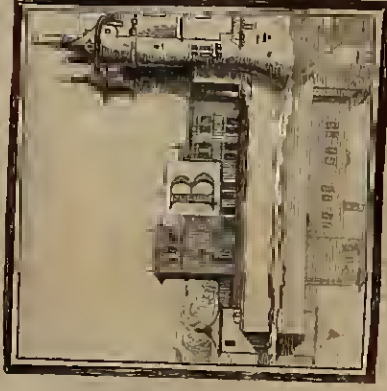
Velim observes, in omnibus his Quadratis lineas
longitudinis esse partes visualium, lineas vero latitudinis esse parallelas lineæ pla-
ni, & in primo Quadrato duci ex punctis, in quibus lineæ BD, CD, tenden-
tes ad punctum distantis, secant visualem AO.

Sub singulis vestigiis Quadratorum, delineavimus alia omnino similia, per quæ
parvo labore fient tres bases, erigendo ad libitum duas primas perpendiculares æ-
quales; ac ducendo tum duas visuales ad punctum oculi O, tum reliquas, ut in
figura. Supponendum est autem, geometricam altitudinem cujuslibet rei desumi ex
lineis normalibus ad lineam plani; quemadmodum latitudo & longitudo geometrica
desumuntur ex eadem linea plani.

Tres aliæ bases inferiores formantur sine lineis oculis ex vestigio & ex eleva-
tione longitudinis optice deformatis, adhibendo solas altitudines ac latitudines angu-
lorum. Nomine altitudinis intelligimus distantiam anguli à linea plani;
nomine latitudinis intelligimus distantiam anguli ab una aliqua linea normali ad li-
neam plani; dummodo he normales eandem babeant positionem respectu basium, &
respectu vestigiorum & elevationum. Quemadmodum autem per concursum altitu-
dinis FG, & latitudinis HI, ope duorum circumorum invenitur unus angulus in
una basi; ita inveniuntur cæteri tum in ea, tum in reliquis.

The Fifth Figure.

Plans of Squares, with their Elevations.



ESIDES what has been already said of the
fore-shortning of Squares in Perspective, it is
convenient to observe, That the Foot of the
first Square is here set within the Line of the
Plan, as much as the Space BA optically con-
tracted; because the Line BD has the Distance
BA from the Visual AO: And in like manner,
the second Square is distant from the Line of
the Plan the Space EA; and so for the rest.

I would have you observe in all these Squares, That by the Length I al-
ways understand part of the visual Lines, and by the Breadth those paral-
lel to the Ground-line; which in the first Square are drawn from the
Points in which the Lines BD, CD, tending to the Point of Distance, in-
tersect the Visual AO.

Under the Plans of these Squares are described three others just like them,
which are easily converted into three Bases, by erecting, at pleasure, the
two first Perpendiculars of equal Height, and thence drawing two Visuals
to the Point of Sight O, which also bound the rest, as in the Figure. Ob-
serve also, That the Geometrical Height of every thing is to be set per-
pendicularly from the Ground-line, or Line of the Plan, as the Geometri-
cal Length and Breadth are also placed on the same Line.

The three other Bases below are form'd without the Help of Occult
Lines, by making use only of the Heights and Breadths of the Angles,
taken from the Perspective Plan and Upright. By Height I understand the
Distance of each Angle, or Corner, from the Ground-Line; By Breadth,
the Distance of an Angle, or Corner, from any Line perpendicular to the
Ground-line; provided these Lines have always the same Place in respect
of the Bases, as they have in respect of the Perspective Plan and Upright.
And as, by the Help of two Compasses, the Height FG, and the Breadth
HI determine the Corner of the first Base; so, in like manner, are found
the Corners of the other Bases.

FIG. V.

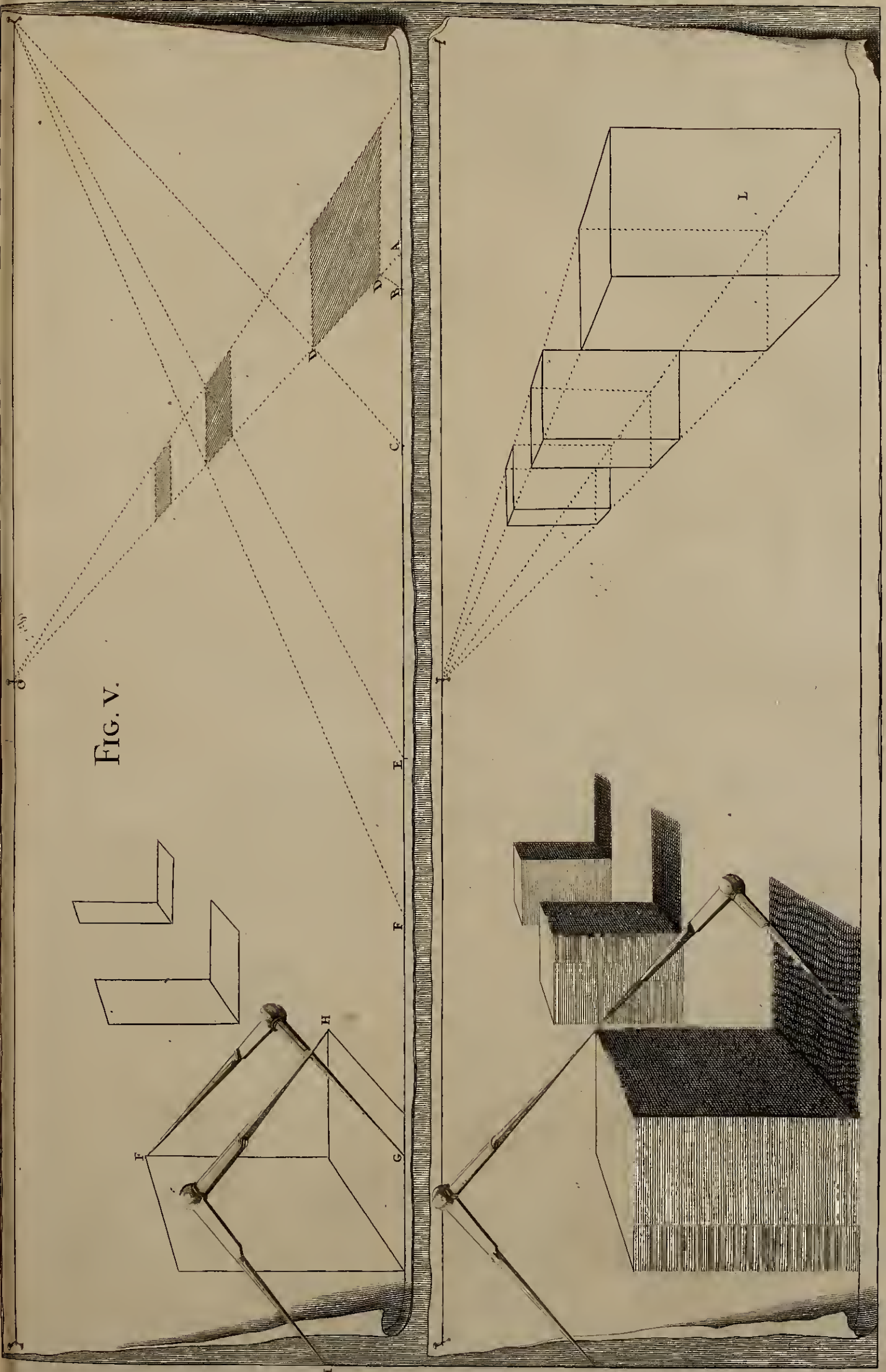




FIG. VI.

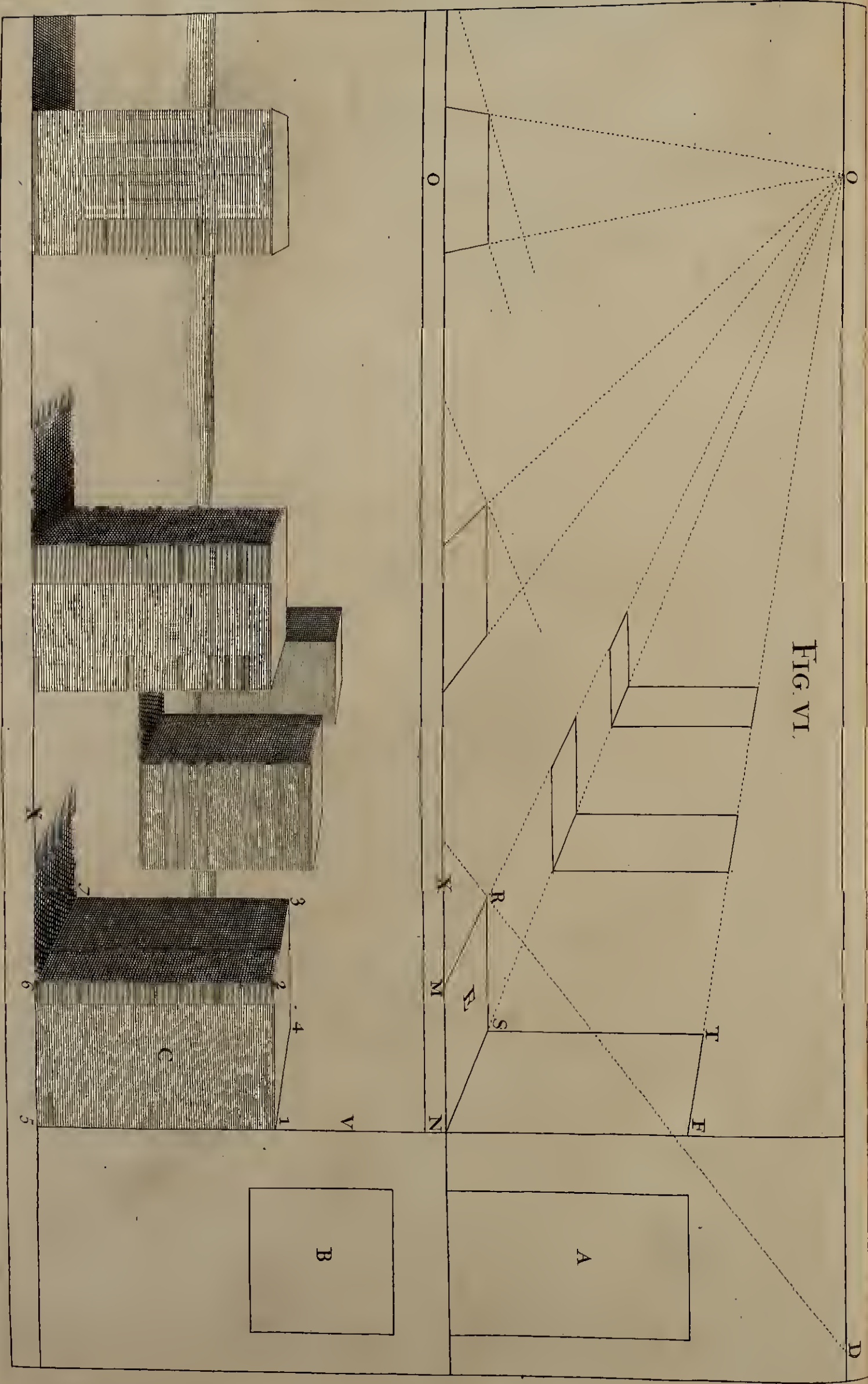


FIGURA SEXTA.

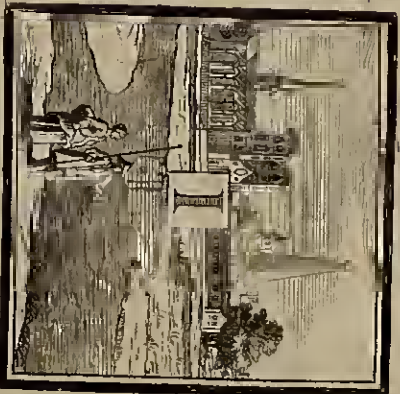
The Sixth Figure.

Modus opticae delineationis, absque lineis occultis.

The Manner of designing in Perspective, without occult Lines.



In hac figura sexta, vestigium geometricum B seorsum posui ab elevatione geometrica A, ut deinceps faciemus. Vestigium B optice contractum in E est NMRS; elevatio contracta longitudinis vestigii est FTSN. Posito autem quod altitudines FN, 1, 5, 2, 6, sunt aequales; latitudines NM, 1, 2, 5, 6, sunt aequales; & rectae NM, 5, 6, sunt in linea X plani; rectae FN, 1, 5, 5, sunt in perpendiculari V: anguli 3 & 4 basis C habent eandem elevationem seu distantiam à linea X plani, quam habet angulus T: anguli 1 & 2 habent elevationem, quam angulus F: anguli 3 & 7 habent eandem latitudinem seu distantiam à perpendiculari V, quam habet angulus R: anguli 2 & 6 habent eandem latitudinem, quam habet angulus M.



In this sixth Figure, I have design'd the Geometrical Plan B separately from the Geometrical Elevation A, as I shall always do hereafter. The Plan B optically contracted, or put in Perspective, in E, is NMRS; the Elevation of its Length in Perspective is FTSN. Then supposing the Heights FN, 1, 5, 2, 6, equal; and the Breadths NM, 1, 2, 5, 6, equal; the Lines NM, 5, 6, to be in the Line of the Plan X; and the Lines FN, 1, 5, in the Perpendicular V: the Angles 3 and 4 of the Base C have the very same Elevation or Distance from the Line of the Plan X, as has the Angle T: the Angles 1 and 2 have the same Elevation with the Angle F: the Angles 3 and 7 have the same Breadth or Distance from the Perpendicular V, as the Angle R has: the Angles 2 and 6 have the same Breadth, as the Angle M has.

FIGURA SEPTIMA.

Aliud exemplum vestigii geometrici,
cum elevatione longitudinis.



I delineanda sit basis dissecta in quatuor partes, fiat vestigium A cum suis divisionibus longitudinis ED & latitudinis CD. Eisdem vero divisiones latitudinis habeat in EF elevatio B quæ pertingit usque ad X. Porro ad contractionem opticam vestigii adhibebitur papyrus complicata in latum & in longum, transferendo in lineam plani latitudinem & longitudinem vestigii. Deinde nullo negotio fiet optica deformatio elevationis, ut clarè positum est in figura. Quomodo autem ex vestigio & ex elevatione longitudinis optice imminutis eruatur basis nitida sine lineis occultis, ex precedentibus manifestum est. Optarem ut per assiduum circini tractationem in hac methodo exercenda operam sedulo ponas; quum ex ea pendeat omnis facilitas delineationum opticarum.

The Seventh Figure.

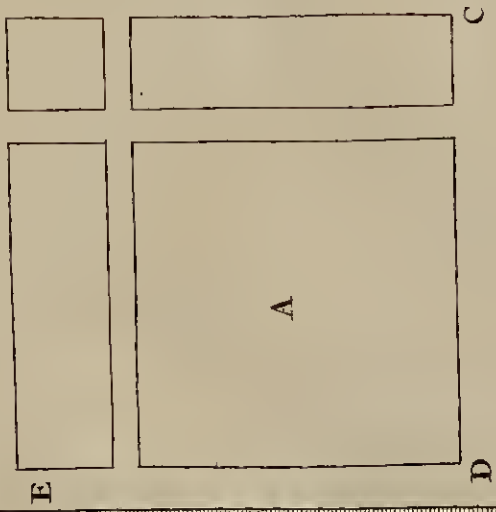
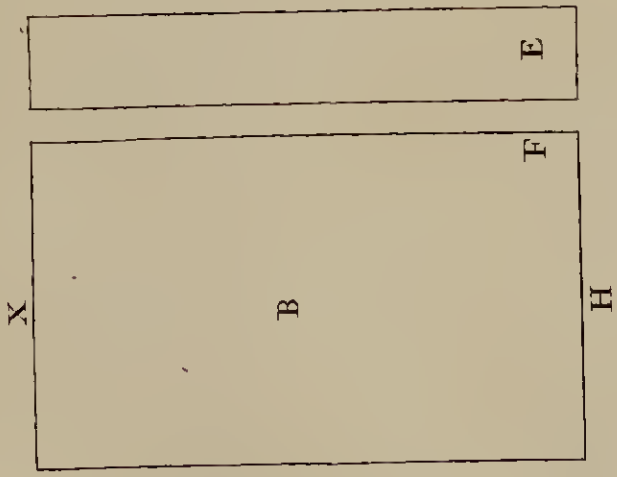
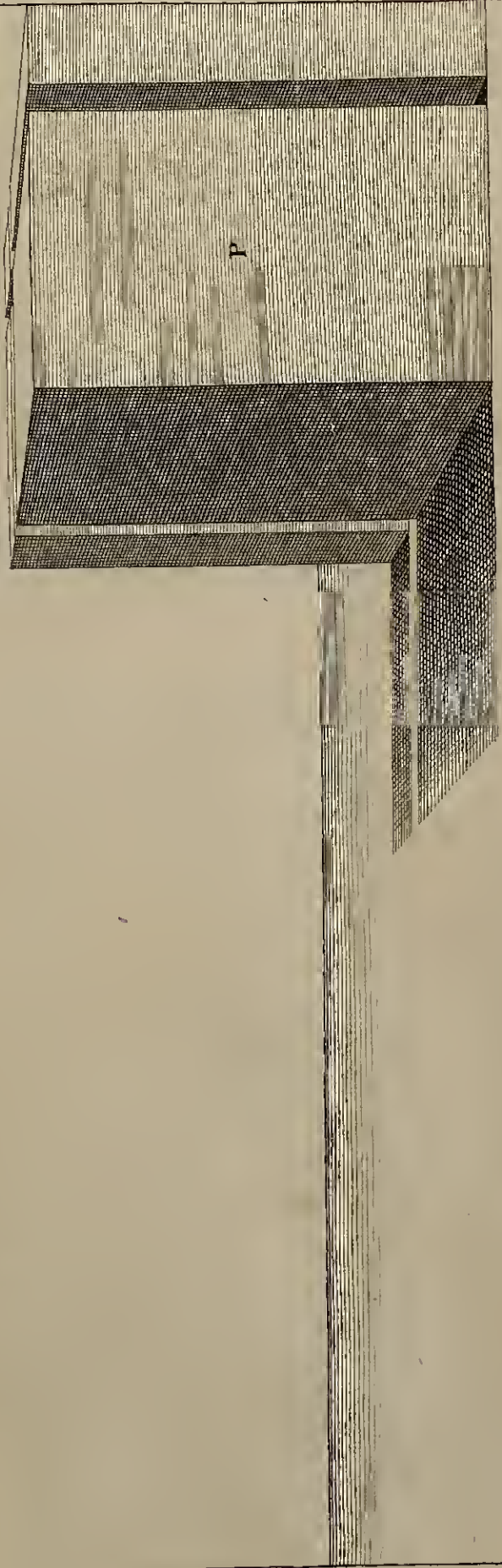
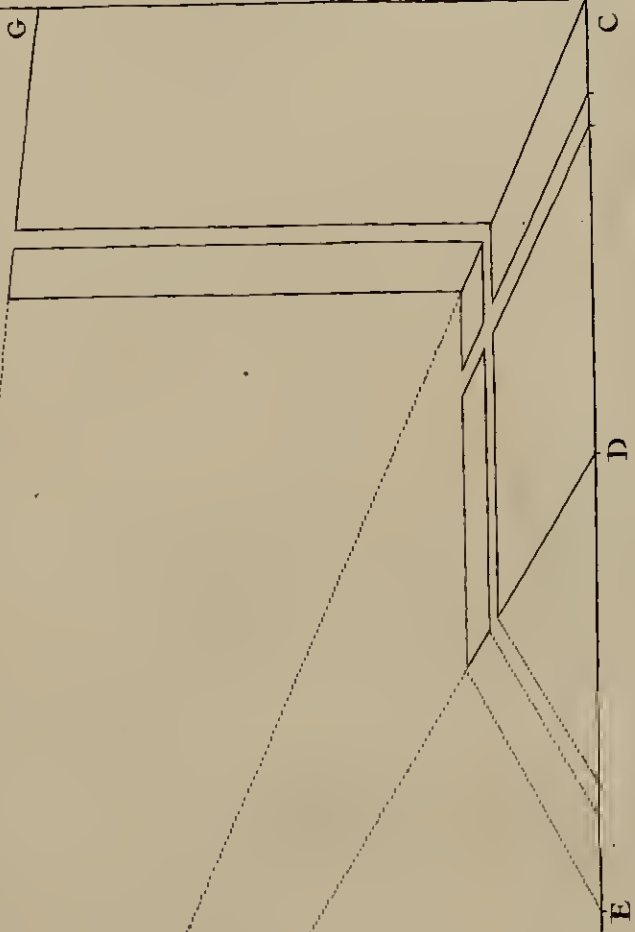
Another Example of a Geometrical Plan and Upright, put in Perspective.



OR drawing in Perspective a Pedestal, or Base, divided into four Parts, make the Plan A with its Divisions of Length ED, and of Breadth CD; and the same Divisions of Breadth EF, in the Elevation B, prolong'd to X. Then make the Perspective-Plan, by transferring the Breadth and Length into the Ground-line, by means of your Paper folded cross-wise. From which Plan the Perspective-Upright is very easily made, as may be plainly seen in the Figure. How the Base below, without occult Lines, is made from the Perspective-Plan and Upright, is manifest from what has been said before. I could wish you would be very diligent in the Practice of this Method by the Compass; because the Dispatch of Perspective-Delineations chiefly depends thereon.

FIG. VII.

O



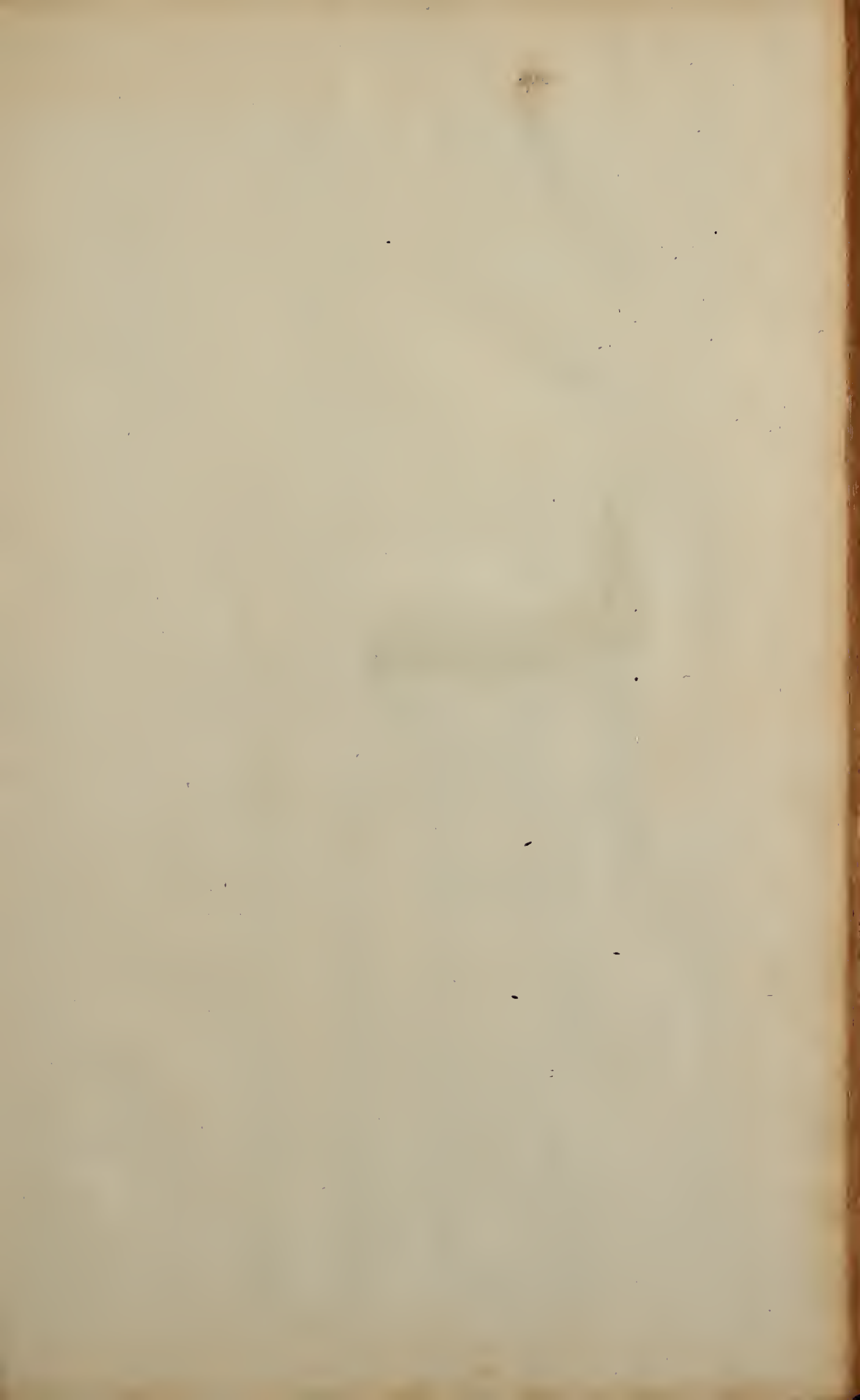


FIG. 8.

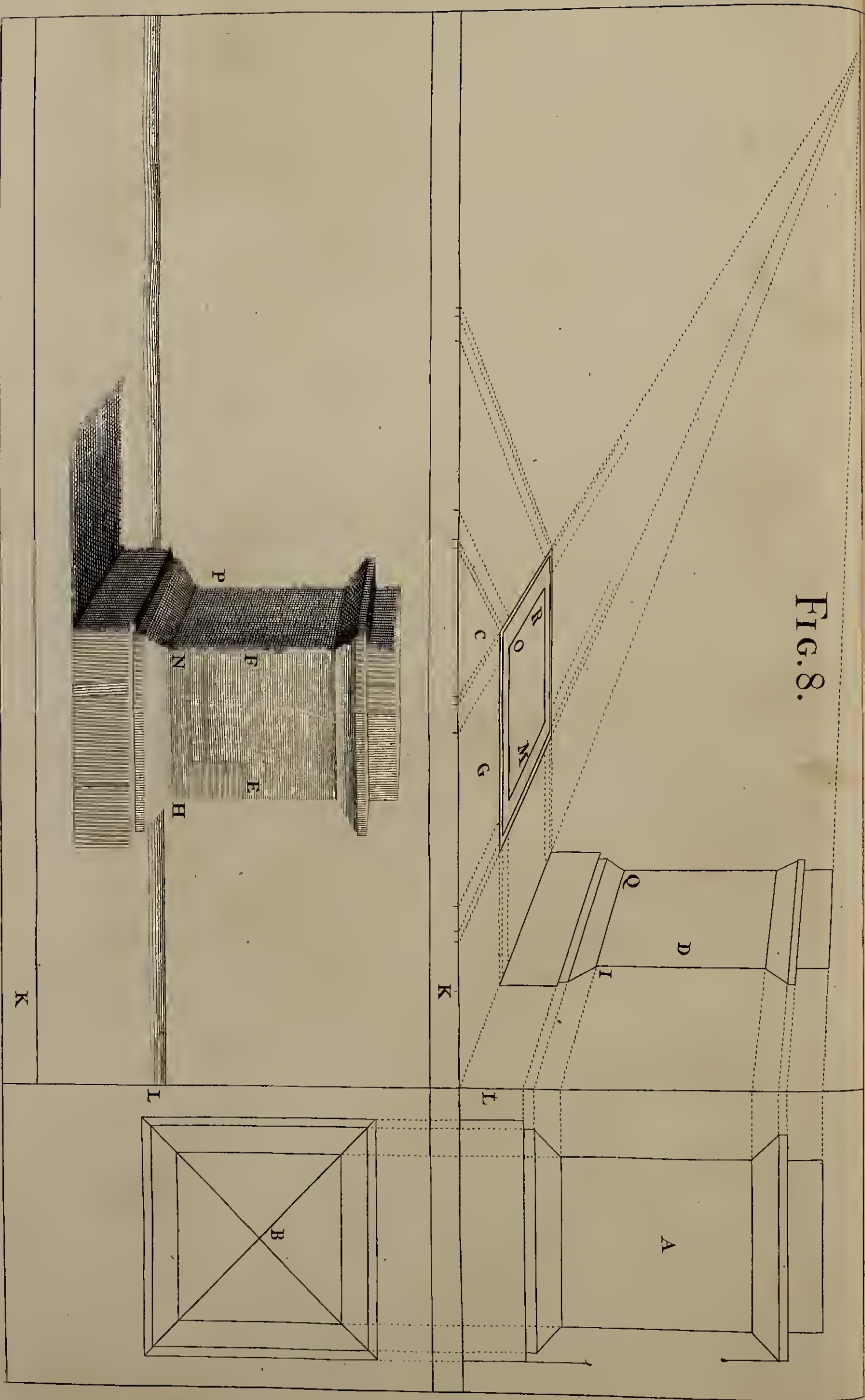


FIGURA OCTAVA.

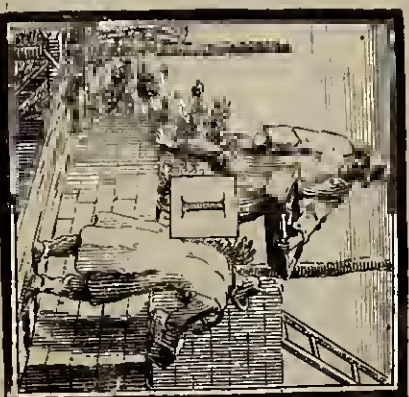
Optica projectio Stylobatæ.



I. libitum fuerit delineare Stylobatam, cum projecturis in summo: & ino, incipies ab elevatione geometrica A, duccendo occultas ad id necessarias, tum versus perpendiculararem L, tum deorsum pro vestigio geometrico B, cujus distantie transferentur in spatium G. Si mensuræ longitudinis distent spatium C à mensuris latitudinis, vestigium deformatum videbitur distare à linea K plani, quantum est idem spatium C. In consruenda optica elevatione D, visuales ex punctis lineæ L dabunt lineas latitudinis; lineas vero altitudinis accipies ex lineis vestigii contracti, ut in figura. In formando Stylobata nitido EF, locum anguli H dabit concursus latitudinis ex linea L usque ad M, & altitudinis ex linea K usque ad L. Concursus tum ejusdem altitudinis, tum latitudinis ex L usque ad O, dabit angulum N. Denum altitudinem anguli P accipies ex K usque ad Q; latitudinem ex L usque ad R.

The Eighth Figure.

The Projection of a Pedestal in Perspective.



If you would draw a Pedestal, with the Projection of its Cap and Base, you must begin with the Geometrical Elevation A, by drawing such occult Lines as are necessary, as well sideways to the Perpendicular L, as downwards for making the Geometrical Plan B, whose Distances must be transfer'd, and carry'd into the Space G. If the Measures of the Length be placed the Distance of the Space C, from those of the Breadth, the Perspective-Plan will then appear removed within the Ground-line K, as much as the said Space C is. In the Construction of the Perspective Elevation D, the Visuales drawn from the Points of the Line L give the Lines of the Breadth; and those of the Height are taken from the Lines of the Perspective-Plan, as in the Figure. In delineating the clean or finish'd Pedestal EF, the Intersection of the Breadth from L to M, with the Height from K to I, gives the precise Place of the Corner H. The Intersection of the same Height with the Breadth LO gives the Angle N. Lastly, the Angle P is found by the Intersection of the Height KQ, with that of the Breadth LR.

FIGURA NONA.

Optica delineatio Architecturæ Jacobi Barozzii ; & primum, de Stylobata Ordinis Etrusci.



ERSPECTIVA nusquam clariùs emicat, quàm in Architectura. Idcirco tibi ob oculos pono Architecturam Jacobi Barozzii, quem à patria nuncupant Il Vignola, reliquis fortasse istationem ; in eaque continetur elevatio geometrica singulorum quinque Ordinum, qui vocantur, Etruscus, Doricus, Ionicus, Corinthius, & Romanus, vel Compositus ; delineando seorsum partes cujuscunque Ordinis in figuris grandioribus. Elevationi geometricæ suum vestigium nos addemus ; ex vestigio autem & ex elevatione optice deformatis, eliciemus apparentias solidorum juxta regulam traditam. Exempli gratia, si delineare velis stylobatam quadratam & pilam Ordinis Etrusci, præter elevationem geometricam A delineare oportet vestigium geometricum B. ex ambobus autem optice contractis formatur stylobata nitidus D, cum anta & pila existente ad latus, accipiendo altitudines à linea plani, latitudines à linea perpendiculari ad ipsum planum. In alia delineatione posuimus pilam ex adverso, ut eis omni modo delineandis assuecas.

Ad vitandam confusionem linearum, proderit ut figure fiant his nostris multò grandiores : in quem finem singulis paginis apposita est scala modularum. Hoc nomine intelliguntur partes equales, in quas dividuntur linee latitudinis & altitudinis elevationum geometricarum ; ac linee latitudinis & longitudinis vestigiorum geometricorum. Si moduli sint parvi, subdividuntur singuli in duodecim partes ; ac prout fuerint grandiores, subdividuntur in partes tringinta, vel sexaginta, vel centumviginti. Modulos Etruscum Doricumque in partes duodecim ; reliquos autem in octodecim partiti sunt.

The Ninth Figure.

The Architecture of Vignola in Perspective ; and first, of his Pedestal of the Tuscan Order.



ERSPECTIVE never appears more graceful, than in Architecture ; for which Reason I present you with that of James Barozzi, from his Country generally call'd *Vignola* ; which perhaps is more in use than any other ; and contains the Geometrical Upright of each of the five Orders, viz. the *Tuscan*, *Doric*, *Ionic*, *Corinthian*, and the *Roman*, or *Composite* ; together with a separate Delineation of the Parts of each Order, in larger Figures. To this Geometrical Elevation we shall add the Plan, and, from both of them reduc'd into Perspective, shall draw the Appearances of Solids, according to the Rule before laid down. For Example : If you would draw the square *Tuscan* Pedestal, and its Pilaster, you must, from the Geometrical Elevation A, make the Geometrical Plan B ; and from both of them reduc'd in Perspective, draw the finish'd Pedestal D, with that of its Pilaster on the Side, by taking the Heights from the Ground-line, and the Breadths from a Line perpendicular to the same. On the other Side we have placed the Pilaster on the Back-part, that you may practise the Drawing them in any manner.

For avoiding the Confusion of Lines, I advise you to make the Figures as much larger than ours as you can ; for which purpose there is annex'd a Scale of Modules to each Figure. By this Name we understand the equal Parts, into which the Lines of the Breadth and Height of the Geometrical Uprights, and of the Breadth and Length of the Geometrical Plans, are divided. If the Modules are small, they are subdivided into twelve Parts ; and according as they are larger, into thirty, sixty, or an hundred and twenty Parts. I have divided the *Tuscan* and *Doric* Module into twelve Parts, and that of the other Orders into eighteen.

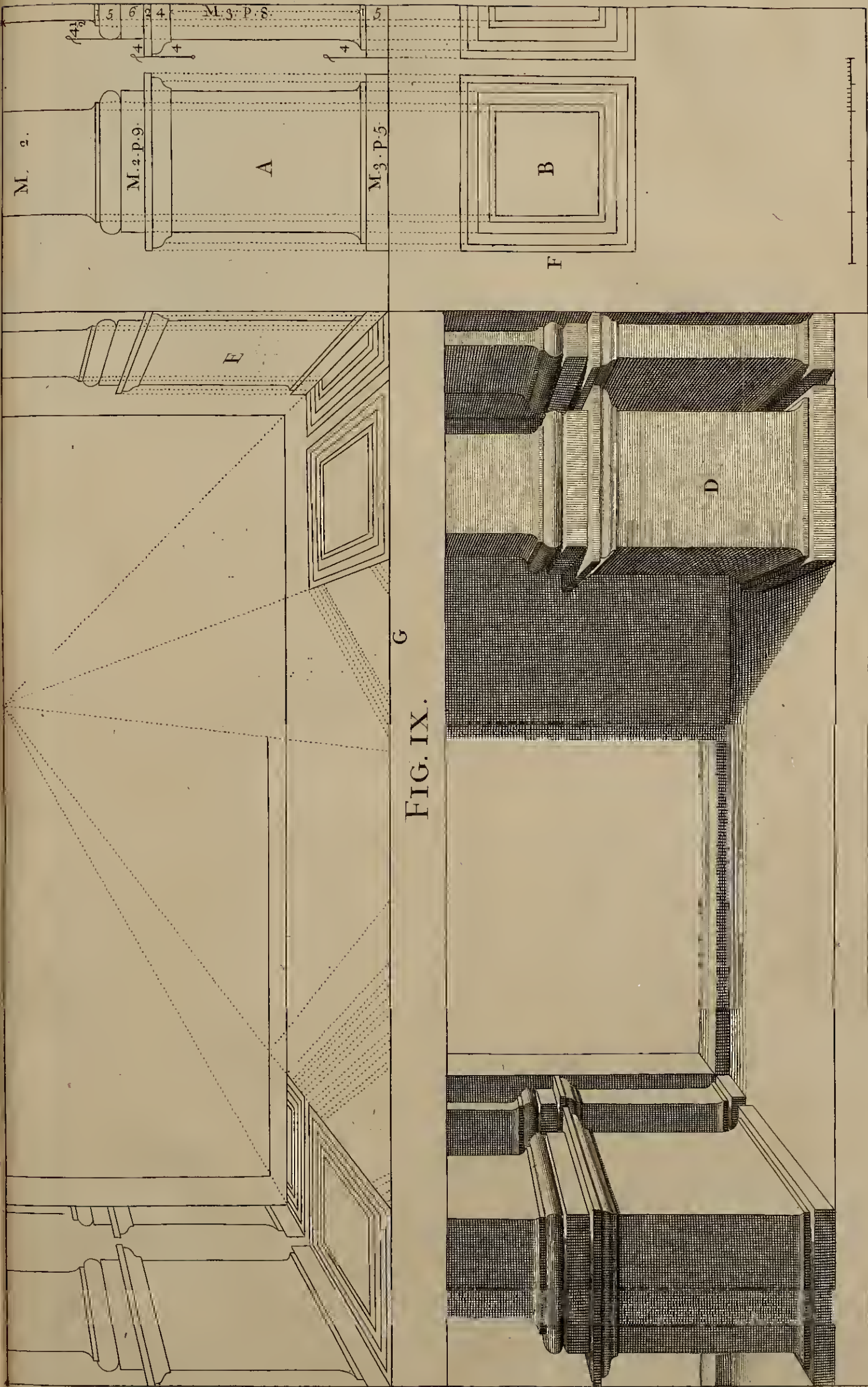


FIG. IX.



FIG. 10.

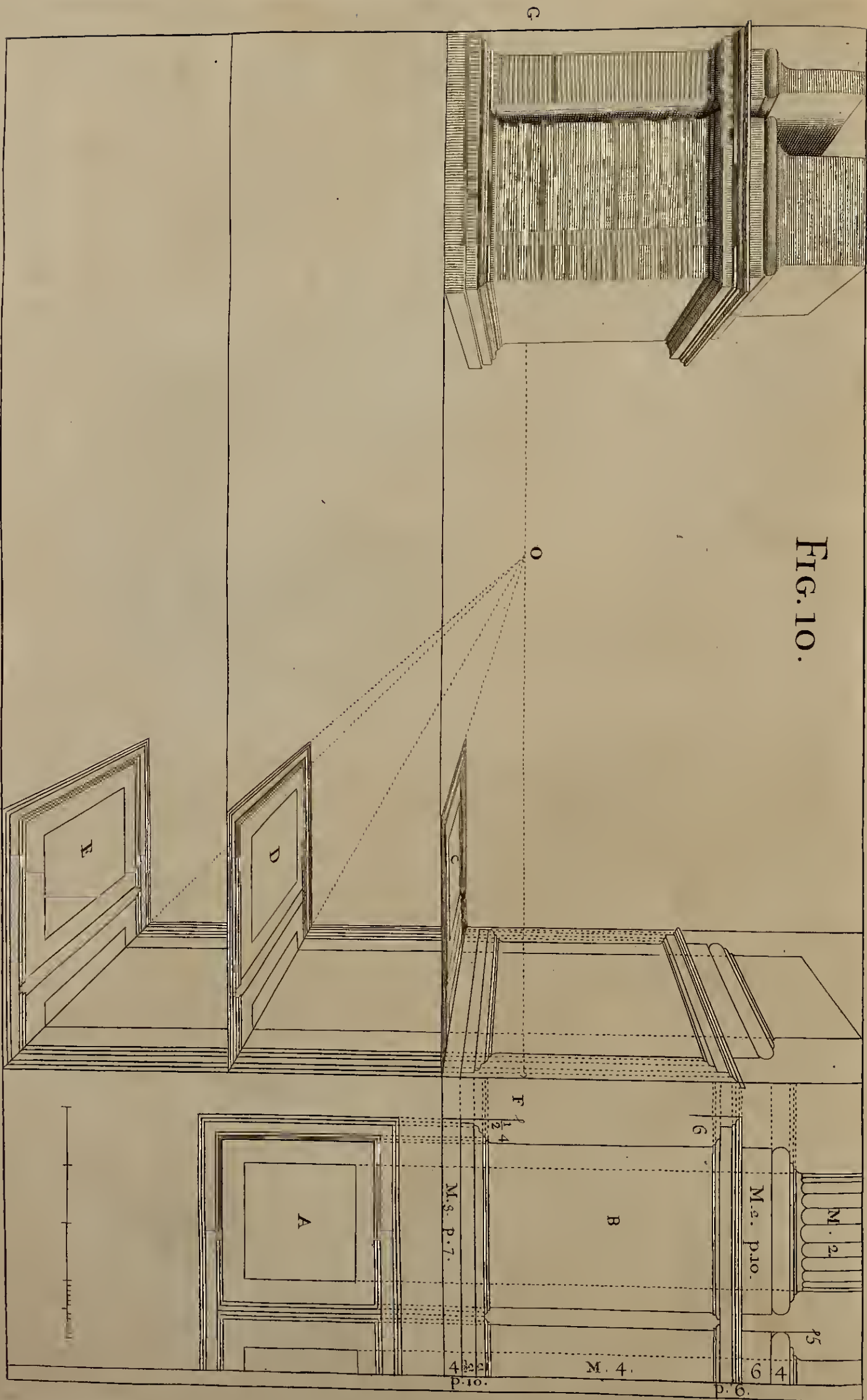


FIGURA DECIMA.

Optica deformatio Stylobatæ Dorici; ubi de modo virandi confusionem, in vestigiis delineandis.



LEVATIO geometrica B Stylobatæ Dorici continet eandem Symmetriam partium quæ habetur apud Barozzium; ex eaque eruitur vestigium geometricum A per lineas occultas, quæ descendunt ex punctis terminativis præcipuarum projecturarum. Earundem projecturarum distantia transferenda sunt in lineam elevationis, notando puncta quæ necessaria sunt ad deformandam elevationem longitudinis Stylobatæ.

Si ob propinquitatem lineæ plani ad lineam horizontis, vestigium evadat confusum, sicut in distantia congrua sub lineâ plani aliæ lineæ planorum ipsi parallele, cum suis vestigiis. Quid autem emolumentum afferat distantia major præ minori, ostendit vestigium E distinctius vestigio D. Singula hæc vestigia sunt notando in lineâ cujuscumque plani mensuras latitudinis & longitudinis vestigii A, & duccendo lineas ad eadem puncta oculi ac distantiæ.

Stylobatam nitidam descripsimus ex parte G, tum ex necessitate, tum ut videas, pro distantia FO, usurpandam esse distantiam GO penitus æqualem.

The Tenth Figure.

A Dorick Pedestal in Perspective; with the Manner of avoiding Confusion, in designing the Plans.



HE Geometrical Elevation B has the same Members and Proportions, as the Dorick Pedestal of Vignola; and the Geometrical Plan A is form'd, by letting fall occult Lines from the principal Projectures of the Upright. Occult Lines are also to be continued to the Perpendicular F, from the several Members requisite for elevating in Perspective the Length of the Pedestal.

When, by reason of the too near Approach of the Ground-line to that of the Horizon, the Plan becomes thereby confus'd; draw at a convenient Distance underneath, other Ground-lines parallel to the first; together with the Plans in Perspective. And of what Advantage the Removal of the Ground-line is, is evident from the Plan E, which is much more distinct than the Plan D. Each of these Plans is made, by marking upon its respective Ground-line the Measures of the Breadth and Length of the Plan A, and by drawing Lines to the same Points of Sight and Distance, which were first assign'd.

We have placed the finish'd Pedestal on the Side G, partly for want of Room, and partly to shew, that the Point of Distance G is there made use of, GO being equal to FO.

FIGURA Undecima.

Stylobatæ Ionici deformatio; ubi de vitanda confusione in elevationibus.



UM in figura precedenti, tum rursus in hac, ostendimus quid agendum sit ubi vestigia A A nimium obliquantur, unde oritur confusio; præcipue in lineis parallelis quæ exhibent latitudines. Non minor difficultas interdum occurret in elevationibus longitudinis optice deformandis; quod videlicet, ob nimiam earum obliquitatem, pervium non sit altitudines singularum projecturarum probe discernere ac designare. Ad scopulos istos declinandos, loco elevationis B adhibebitur elevatio C, quæ distinctior est, tum illâ, tum duabus intermediis D & E, ob majorem distantiam quam habet à puncto oculi.

In delineando stylobata nitido, latitudines accipientur ex ultimo vestigio, ponendo unam cuspidem circini in linea perpendiculari, quæ proxima est literæ O. altitudines accipientur ex elevatione C, ponendo unam cuspidem circini in linea plani, ut in præcedentibus ostensum est.

The Eleventh Figure.

The Ionick Pedestal in Perspective; with the Manner of avoiding Confusion, in Elevations.



S in the foregoing Figure, so in this also is shewn what is to be done, where the Plans A A lie so oblique, as to cause Confusion; especially in the Parallel-lines which give the Breadths. The like Inconvenience often happens in elevating the Lengths in Perspective; when by their too near Approach to the Point of Sight, the Contour of the several Mouldings can't be distinctly delineated: For avoiding which, instead of B you may make use of the Elevation C, which is not only more distinct than the former, but better than either of the two intermediate ones D or E, by so much as it is more remote from the Point of Sight.

In designing the finish'd Pedestal, the Breadths are taken from the lowest Plan, by setting one Point of the Compasses in the perpendicular Line OL: the Heights are taken from the Elevation C, by placing one Point of the Compasses in the Ground-line, as has been shewn before.

FIG XI.

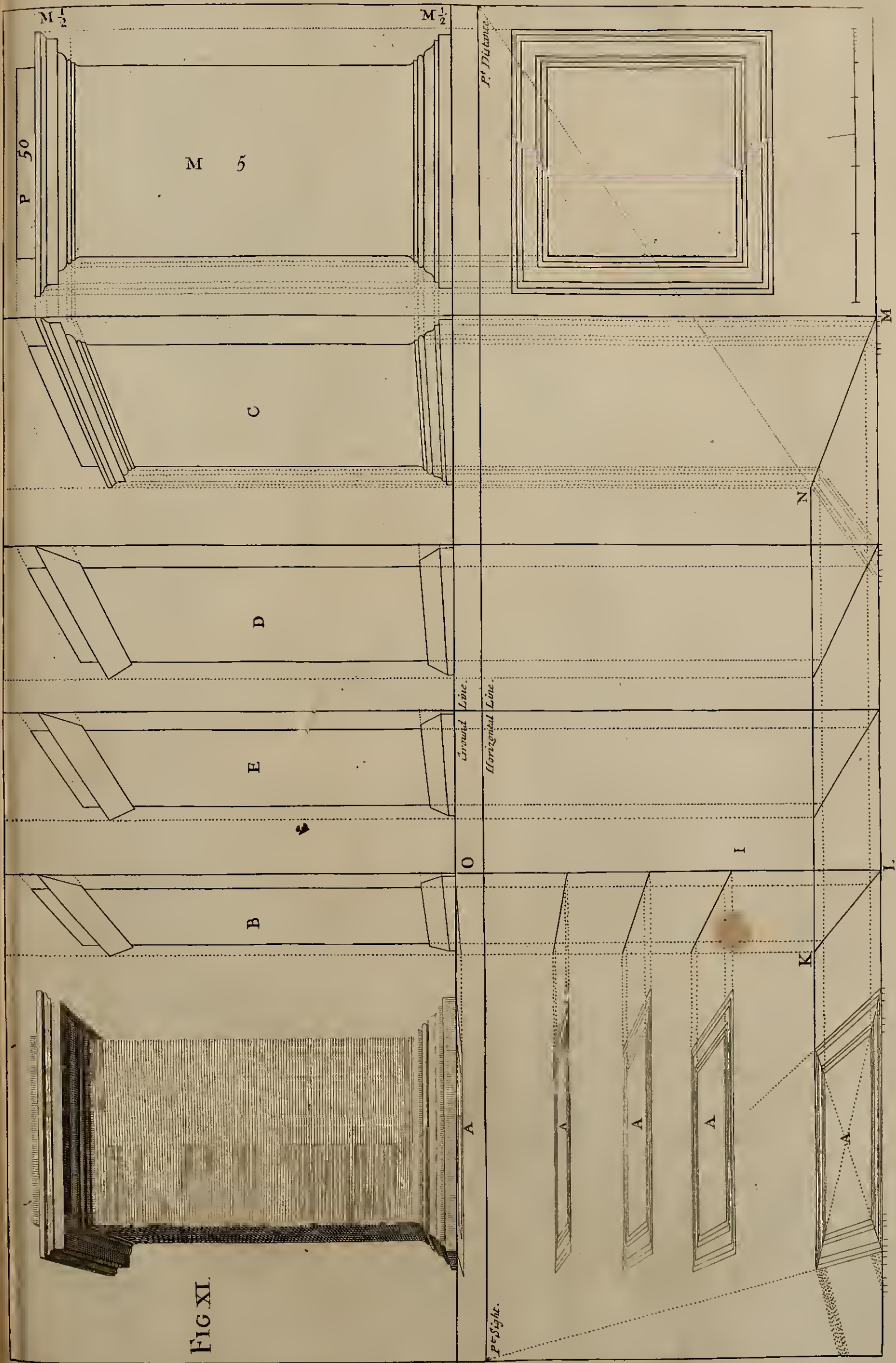






FIG. XII

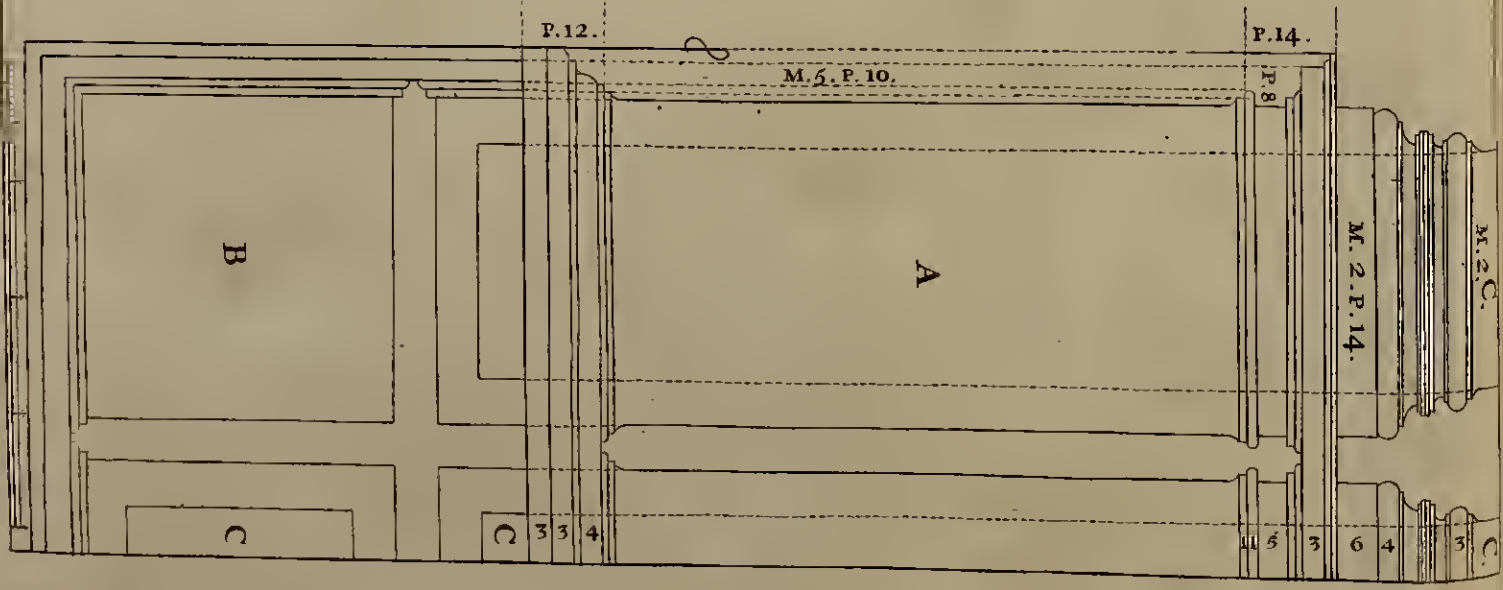
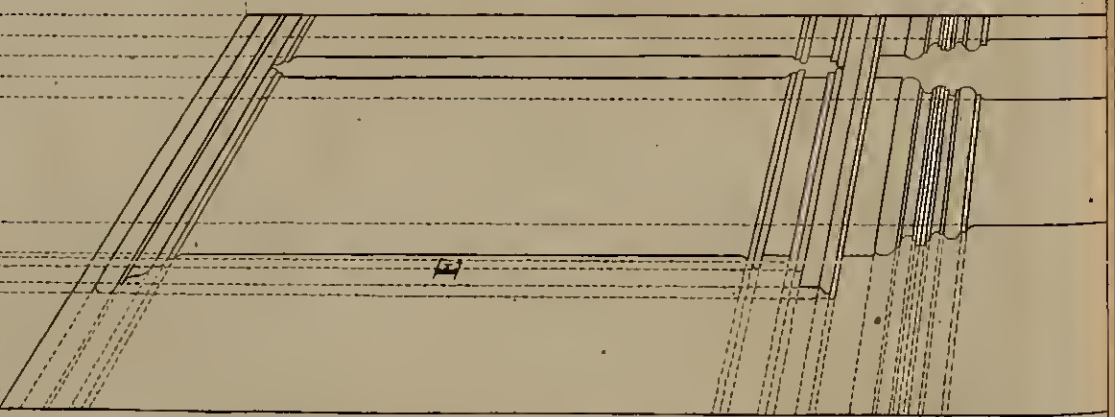
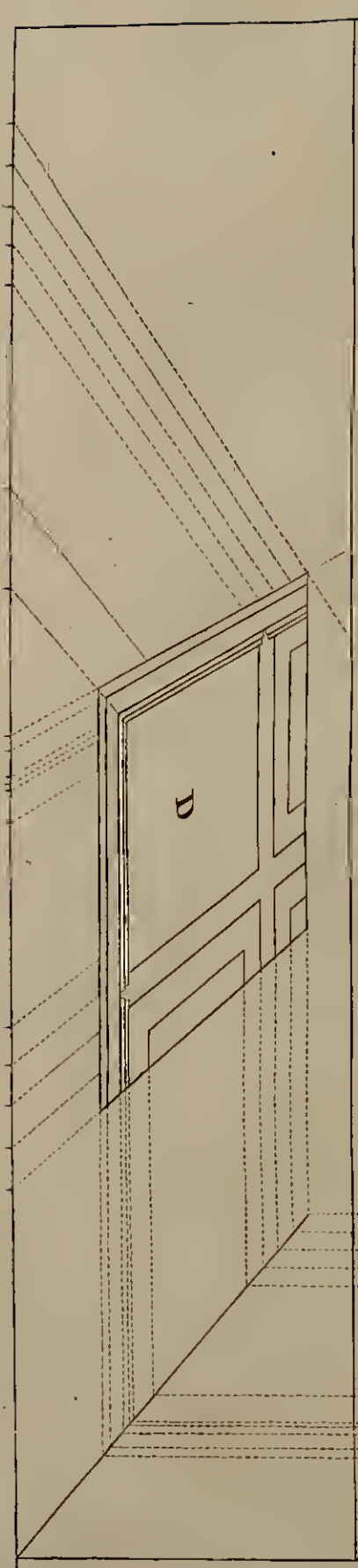
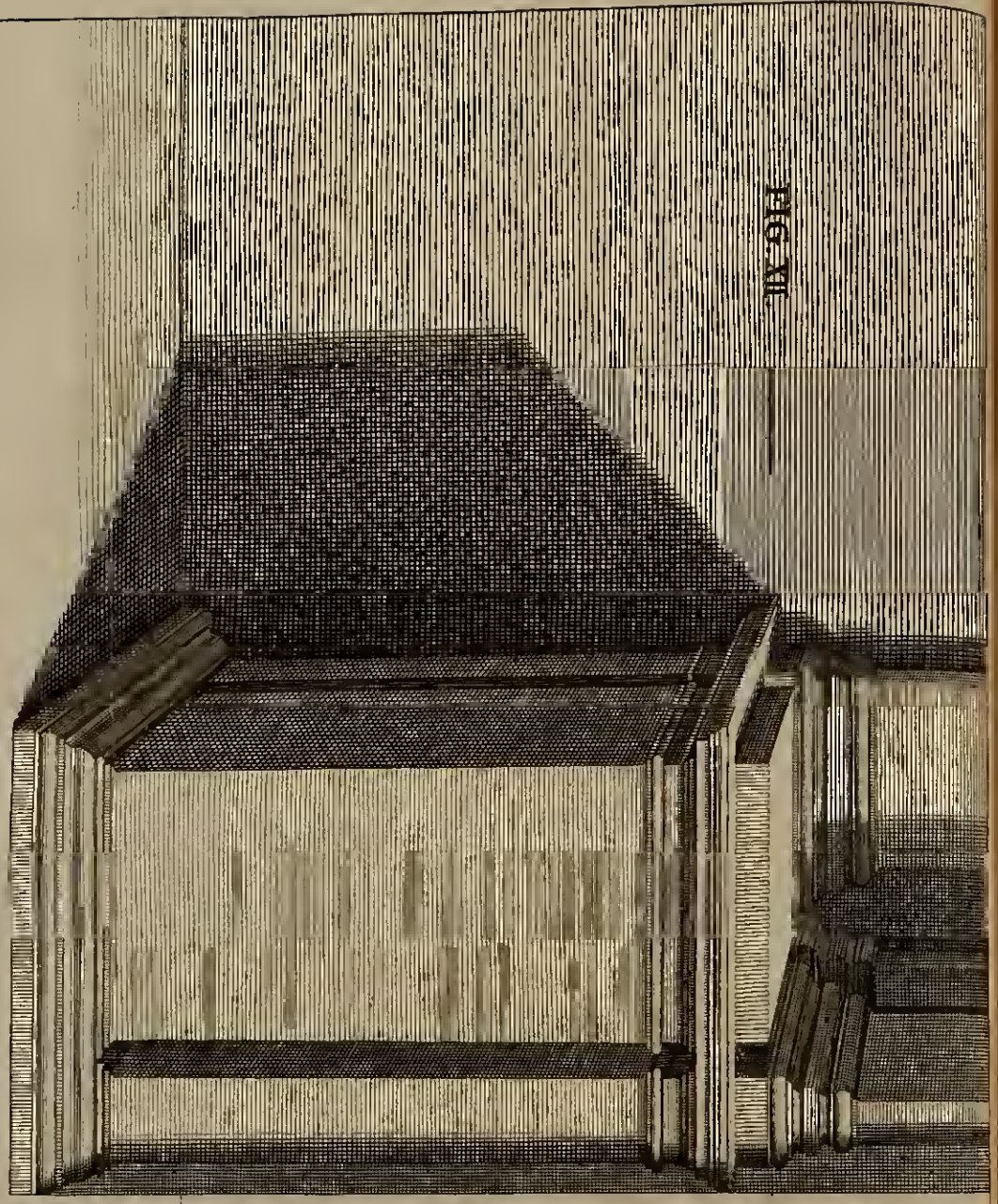


FIGURA Duodecima.

Deformatio stylobatæ Corinthii,
cum duabus pilis.



RNATUS gratiâ, stylobatæ Corinthio additæ sunt pilæ, quæ pone columnas locari solent. Ut autem pilæ clarius appareant, columna omissa est, cujus deformatæ rationem nondum tradidimus. Mensuras omnes ex Bazarzio acceptas esse demonstrat ipsum Schema, in quo elevatio geometrica stylobatæ est A; velligium ejus geometricum est B: pilæ CC. Velligium opticè contractum est D. elevatio longitudinis stylobatæ opticè contracta est E, ac methodo consuetâ ex iis eruatur stylobata nitidus cum suis pilis.

The Twelfth Figure.

The Corinthian Pedestal, with its Pilasters,
in Perspective.



ORnaments sake, we have added to this Corinthian Pedestal the Pilasters, which are usually placed behind Columns: And that they may be the more perspicuous, have left out the Column, not having yet shewn the Manner of putting it in Perspective. The Scheme shews the Measures are taken from *Vignola*; in which the Geometrical Upright of the Pedestal is A; the Geometrical Plan of the same is B; that of the Pilasters CC. The Plan in Perspective is D, the Elevation in Perspective is E; from which the finish'd Pedestal and Pilasters are drawn by the usual Method.

Figura Decimertia.

Projectio Stylobatæ, ordinis Compositi.



UUM pagina non caperet integrum stylobatam tantæ molis, fingere oportuit detractum illi esse aliquid de trunco; ac partem supremam stylobatæ sustentari ab infima, non immediate, sed per quatuor asseres; eisque impostam fuisse adjumento funium suspensorum ex trochlea. Elevatio geometrica stylobatæ est B; vestigium geometricum est A. Ex his eruitur optima delineatio vestigii C & elevationis D. ac postea formatur stylobata nitidus E, accipiendo latitudines ex vestigio C, altitudines ex elevatione D.

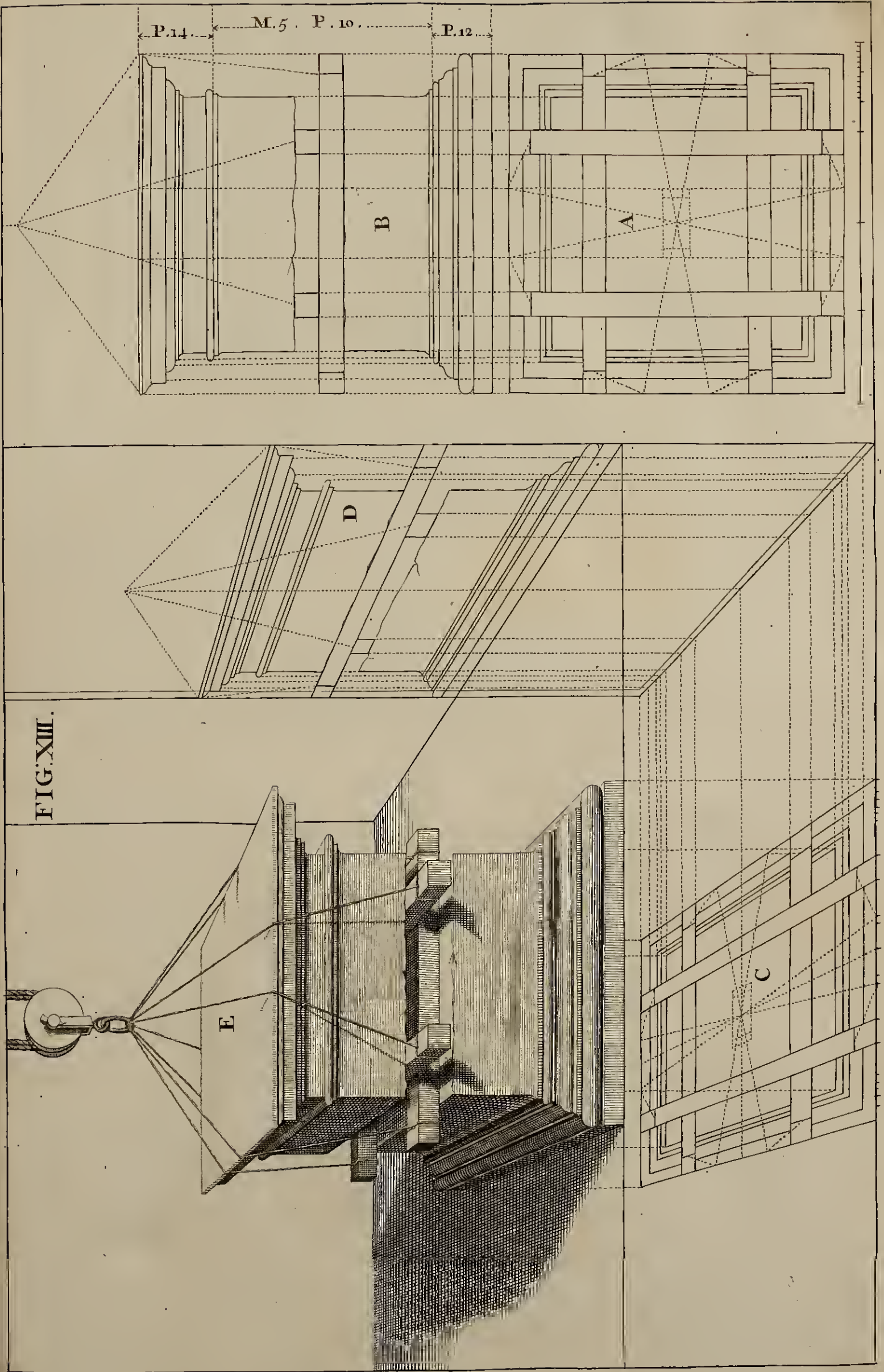
The Thirteenth Figure.

The Projection of a Pedestal, of the Composite Order, in Perspective.



WANTING Room in this Page to describe so large a Pedestal entire, we imagine it to have lost part of its Trunk, and the upper part to be set on the lower; not immediately, but on four Cross-pieces that intervene; and for placing it thereon, we suppose the Assistance of Ropes and a Pulley. The Geometrical Elevation of the Pedestal is B; its Plan A; from whence are found their Projections in Perspective D and C. Then taking the Breadths from the Plan C, and the Height from the Elevation D, you complete the finish'd Pedestal E.

FIG. XIII.



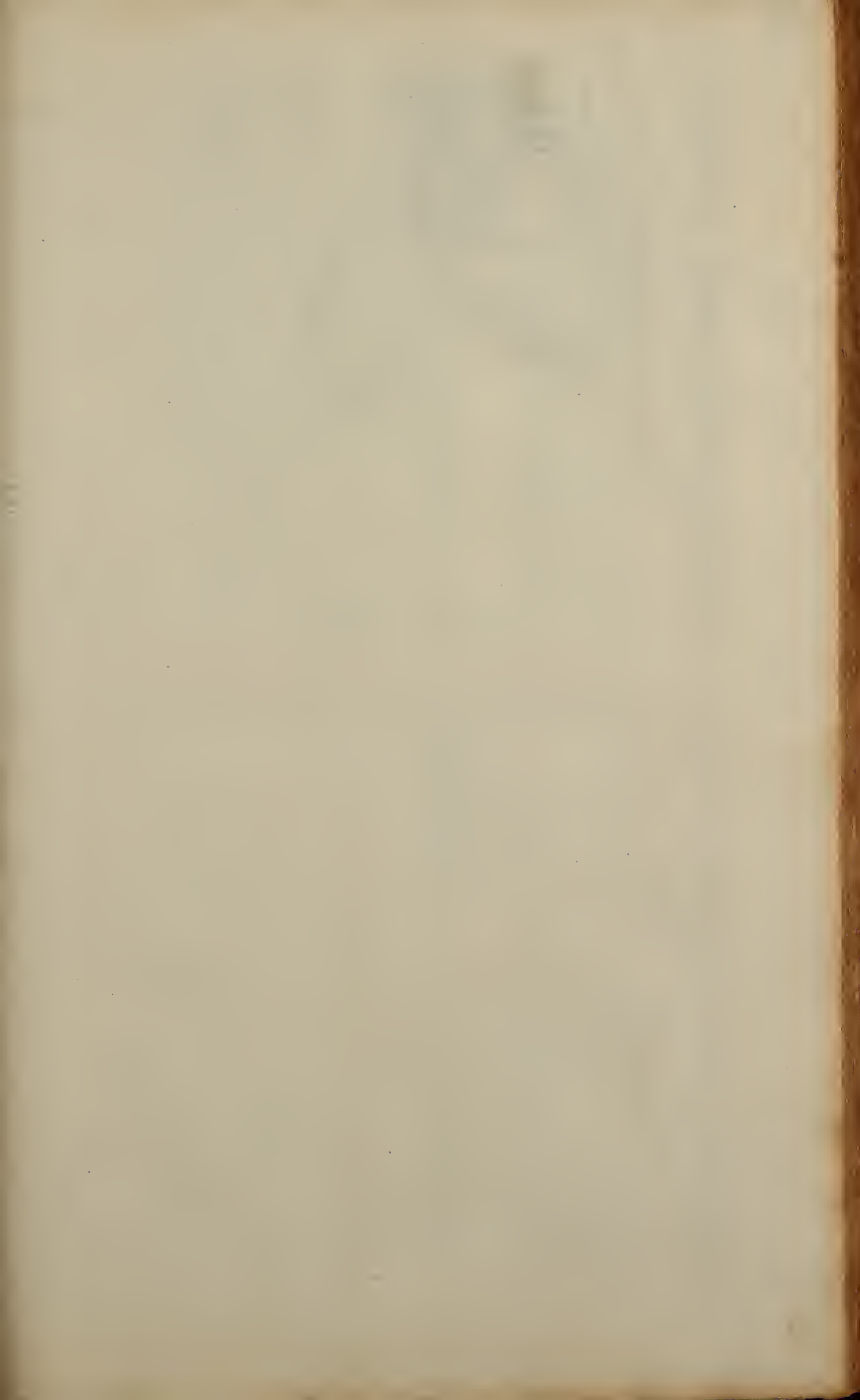


FIG. XIV.

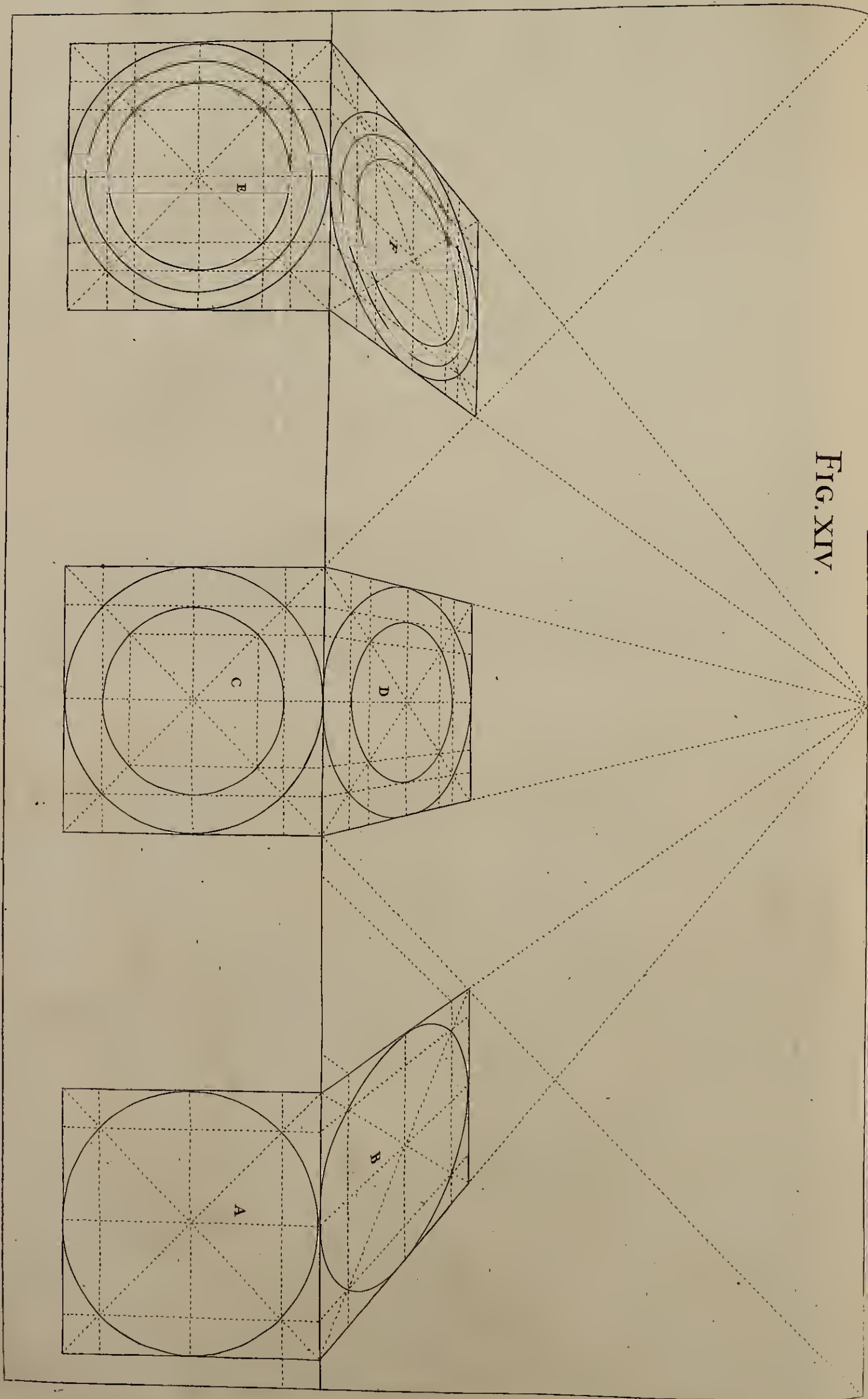
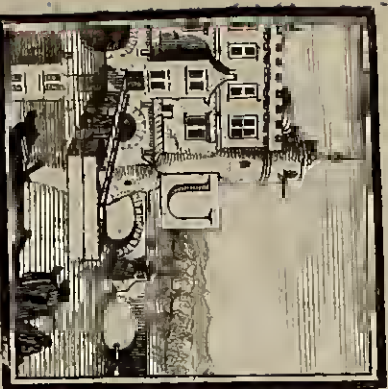


Figura Decimaquarta.

Deformatio circulorum.



T Sylobatis imponere liceat columnas cum suis basibus & capitellis, docendus est modus qui servandus est in projectione optica circulorum, tum singularium, tum duplicium aut multiplicium circa idem centrum.

Vestigium geometricum A constat quadrato in quatuor partes equales diviso, cui circulus inscribitur, additis diagonalibus: & ubi hæc secant circum, sunt rectæ parallele ad singula latera quadrati. Deinde quadratum cum omnibus divisionibus optice immittitur; ac tum per quatuor puncta ubi tres lineæ rectæ se interfecant, tum per quatuor extrema reliquarum duarum diametrorum circuli, ducetur cum venustate circumferentia circuli B. Si addere velimus alium circulum, vestigio geometrico C inscribetur aliud quadratum; indeque habebitur optica delineatio duplicis circuli D. Inter hos duos quomodo liceat describere tertium, per octo sectiones quadratorum, ostendunt figura E & F. Uno verbo, circuli describuntur per quadrata, adhibendo sectiones visualium cum parallelis ad lineam plani; ac nullum est punctum in quadratis & circulis A, C, E, cui per sectiones illas nequeat inveniri punctum correspondens in quadratis & circulis B, D, F. Nihilominus ubi opus habeas pluribus circulis, autor tibi summe multiplices quadrata, plus consensionis allatura tibi quam adjumenti.

The Fourteenth Figure.

Circles in Perspective.



HAT upon Pedestals you may be able to place Columns with their Bases and Capitals, it is requisite you should know the Manner of putting Circles into Perspective; whether single, double, or many concentrick.

The Geometrical Plan A consists of a Square with a Circle inscrib'd, whose Diameters divide it into four equal Parts; and the Diagonals being drawn where they intersect the Circle, continue Lines parallel to each Side of the Square. The Square, with all its Divisions, being put in Perspective; by the four extreme Points of the Diameters, and by those of the Intersection of the Diagonals, you nearly trace by hand the Circumference B. If you would add another Circle, you must inscribe another Square, as in the Plan C; from whence you find in Perspective the double Circle D. Between these two Circles, you may, by the eight Intersections of the Squares, describe a third; as is evident by the Figures E and F. In a word, all Circles are described by the Help of Squares, tracing them by the Intersections of the visual Lines, with those parallel to the Ground-line: Nor is there any Point in either the Squares or Circles A, C, E, whose correspondent Point may not be readily found by such Sections, in the respective Squares and Circles B, D, F. Nevertheless, where your Work requires many Circles, I would advise you to use as few Squares as possible; lest they perplex, rather than assist you.

Figura Decimaquinta.

Optica delineatio Columnæ.



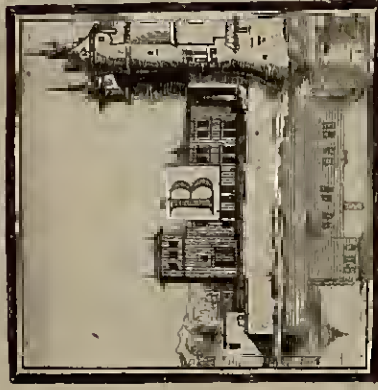
ESCRIPURI frustum cylindricum I uniforme, fiet elevatio A, & vestigium geometricum B, saltem quoad medietatem. Ex hoc optice deformato, ut vides in C, duceide sunt parallele tum latitudinis ad visualem D, tum elevationis ad visualem E; ex quibus describentur circuli optice contracti F & L, accipiendos latitudines ex vestigio C, altitudines ex perpendiculari M; & juxta hanc methodum circuli F & L sunt sine ope quadratorum. Demum ducende sunt perpendiculares G & H, que tangent circulos F & L in punctis terminativis maxime latitudinis.

Nullum est punctum in vestigio C, cui per lineas latitudinis & elevationis nequeat inveniri locus correspondens in circulo F. Exempli gratia; locus puncti 7 est punctum 6. Hunc autem locum habemus per tres lineas, CD, DE, E 7.

In delineandis duobus frustis cylindricis, cum summo & imo scapo, eandem regulam servare oportebit.

The Fifteenth Figure.

A Column in Perspective.



BEING to describe Part of the Shaft of a Pillar without Projectures, makè the Elevation A, and the Geometrical Plan B, at least to the middle: From this brought into Perspective, as you perceive in C, must be drawn Parallels both of Breadth to the Visual D, and of Elevation to the Visual E; from which are described the Circles in Perspective F and L, taking the Breadths from the Plan C, and the Heights from the Perpendicular M: And according to this Method the Circles F and L are made, without the Help of Squares. Lastly, draw the Perpendiculars G and H, by the Points which terminate the greatest Breadth of the Circles F and L. There is not a Point in the Plan C, but what, by means of the Lines of Breadth and Elevation, may be found in the Circle F. For Instance; the Place of the Point 6 is 7, which is found by the three Lines CD, DE, E 7.

In designing the two Pieces of a Pillar, with the Projecture of the Fillet at Head and Foot, you must observe the very same Rule.

FIG. XV.

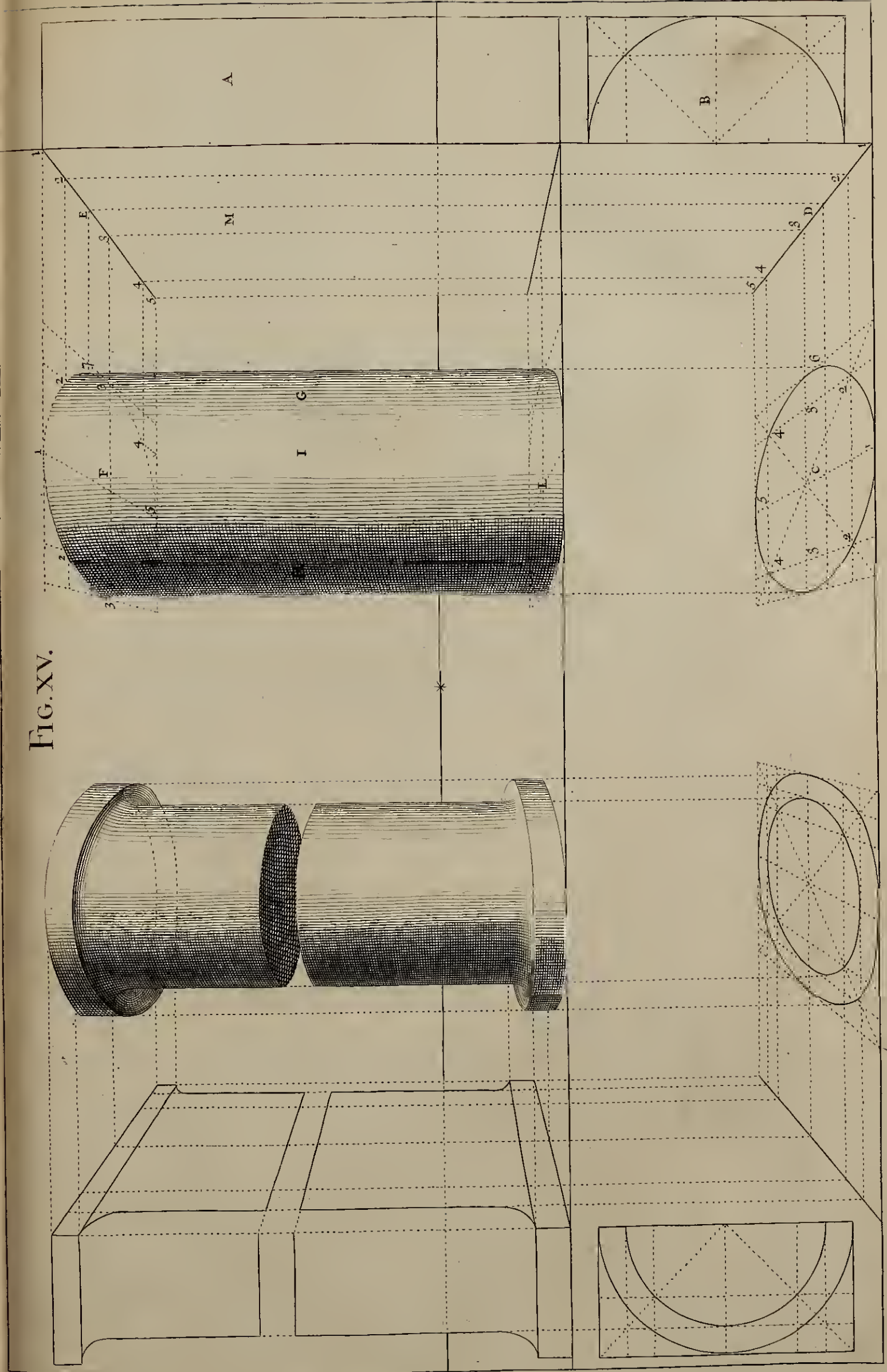




FIG. XVI.

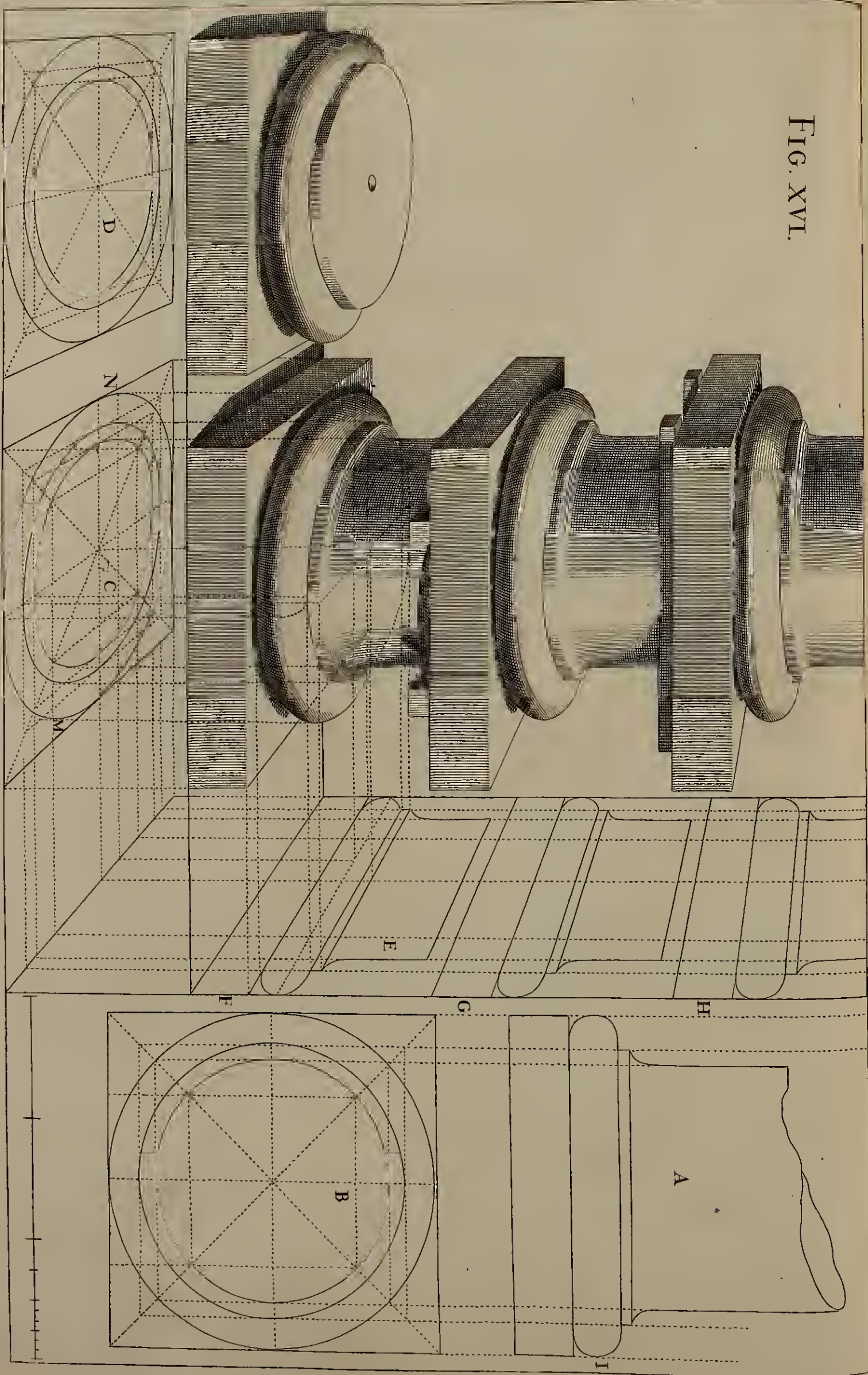
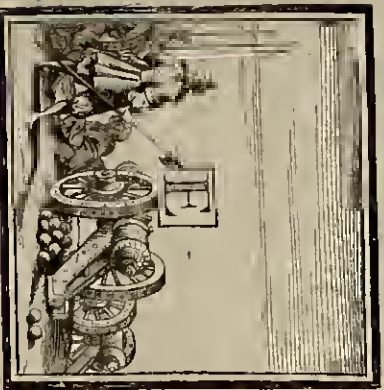


Figura Decimafexta.

Optica projectio basif Etrufcæ.



¶ elevatione geometrica A eruiur' viffigium B. Hoc autem deformato in C & D, ex circulis viffigii C habentur latitudines columnæ, quadræ, ac tori triplicis basif: & eodem modo ex viffigio D habentur latitudines quadræ ac tori ultimate basif. Ex maximis latitudinibus circulorum viffigii C ereximus perpendicularares ad partes que ipsif respondent in basif; ut agnoscas quenam sint puncta maxime latitudinis in eisdem partibus. Hæc puncta (que in circulo maximo viffigii C sunt M & N) inveniuntur tangendo circumferentiam uniuscuiusque circuli regulâ parallelâ ad lineam perpendiculararem E. nam si figura exactè delineata fuerit, regula tanget singulos toros trium basium in punctis maxime hinc inde latitudinis.

Magis laborandam erit in reperendis altitudinibus quatuor basium. Porro si sedulo inspectur deformatio elevationis F, aliarumque duarum, (que factæ sunt, notatis in linea perpendicularari E divisionibus desumptis ex elevatione geometrica A) constabit, nullum esse punctum in circulis viffigii C, cui nequeat inveniiri punctum correspondens in toro & quadrâ ipsius basif, ut ostendant lineæ occultæ, que incipiunt ex M & N. Earum qualibet ex elevationem F, & cum alia linea latitudinis ex elevatione F ad basim. Porro ex figura constat, superficiem superiorem quadræ seduci oculis à columna, & aliquid ex parte postica tori quod ceteroqui conspiceretur, abscondi à quadrâ. Proinde torus, qui ex punctis maxime latitudinis retrosum spectatur, eoque delineandus est, quoad hinc inde occurrat quadrâ ipsam cooperienti. Præsertim autem singula membra ita exactè delineari, quasi essent diaphana; ut partes oculis impervie, omnino cohercant cum partibus que ipsif conspiciuntur.

Completâ delineatione, si figuram tuam ex perpendicularulo puncti oculi ex debita distantia contemplatus fueris, omnes defectus facile deteges & statim corriges. Præcipuam diligentiam ponas in formando & emendando toro, qui habet duas rotunditates; unam quatenus ambit columnam; alteram quatenus caret angulis, ut ostendit elevatio geometrica in A.

The Sixteenth Figure.

The Tuscan Base in Perspective.



FROM the Geometrical Elevation A, is drawn the Plan B; which being put into Perspective, as you see in C and D, from the Circles of the Plan C you have the Breadths of the Column, and of the Lift, and *Torus* of the three Bases: And after the same manner, by the Plan D, you have the Breadth of the Lift and *Torus* of the last Base. From the greatest Breadth of the Circles of the Plan C, we have erected Perpendiculars to the Parts that answer them in the Base, to the end that you may see where the Points fall, which terminate the greatest Breadth of those Parts. These Points (which in the biggest Circle of the Plan C are M and N) are found by touching the Extremity of the Circumference with a Line parallel to the Perpendicular E: for if the Figure were exact, that Line would touch every *Torus* of the three Bases in the extreme Points of their Breadth.

The Heights of the four Bases are something more difficult to be found. Nevertheless, if you consider well the Elevation F, and the other two G and H, (which are made by transporting the Divisions of the Elevation A upon the Perpendicular E) it will plainly appear that there is no Point in the Circles of the Plan C, to which there may not be a correspondent Point found in the *Torus* and Lift of the said Base; as the occult Lines shew, that arise from M and N; each of which is a Continuation of three Lines: The first of Breadth, from the Plan C to the Visual; the second of Height, from the Visual to the Elevation F; the third of Breadth, from the Elevation F to the Base. Now, tho' it's plain by the Figure, that the Body of the Column prevents the Sight of good part of the Filler, and the same Filler takes off from part of the *Torus*, which would otherwise be visible; for which Reason the Back-part of the *Torus* is continu'd only till it meet the same: Yet it's certainly best to draw every Member complete, as tho' the Work were transparent; that the Parts hidden from the Eye may the better agree with those that are expos'd to it.

When your Draught is finish'd, if you view it at the due Distance, and perpendicularly to the Point of Sight; you'll readily discover and rectify what's amiss. Your chief Care will be employ'd in shaping the *Torus*, difficult by reason of its Roundness both ways; namely, in the Contour of its Moulding, as in the Elevation I; and in the Circuit it makes about the Column.

Figura Decimaseptima.

Deformatio basis Doricæ.



*D vitandam satietatem quam
pareret nimia uniformitas, u-
nam ex basibus invertimus.
Utraque autem basis delinea-
ta est metodo quam tradi-
dimus figurâ præcedenti. E-
ademque methodus adeò manifestè patet ex li-
neis occultis latitudinum & elevationum, ut
superfluum futurum sit ipsam repetere.*

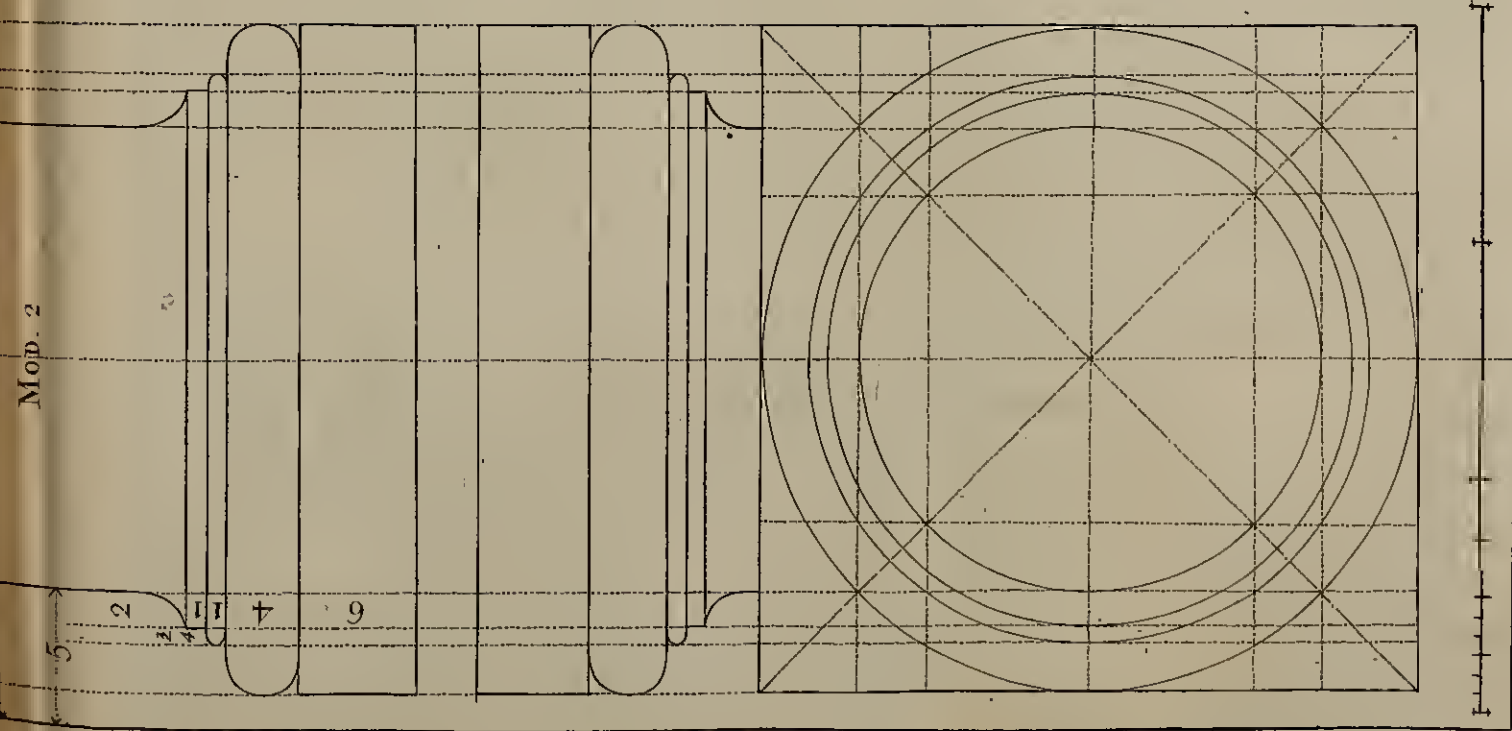
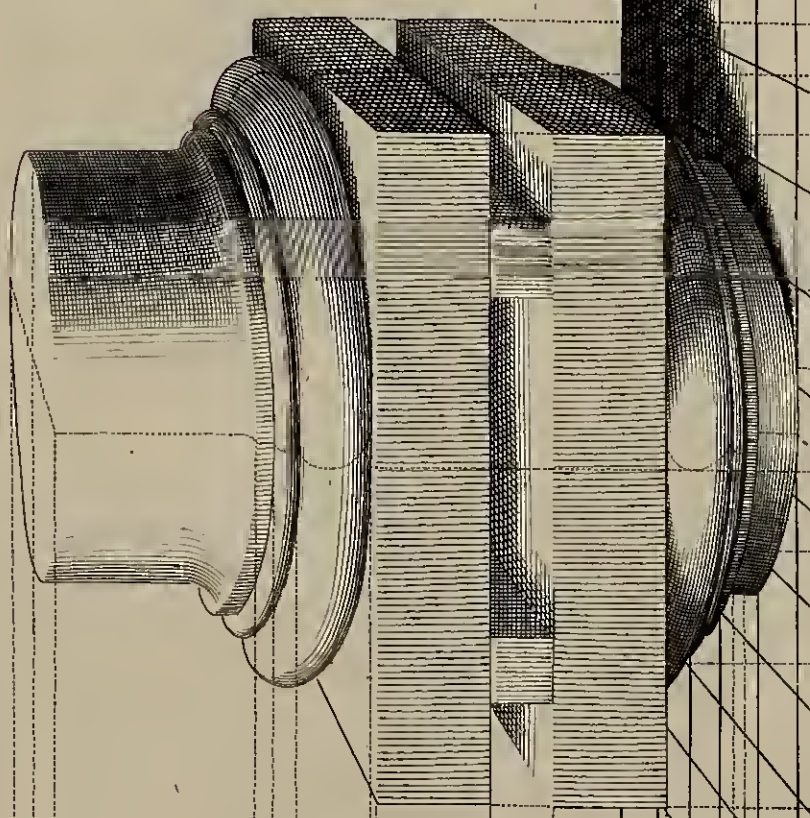
The Seventeenth Figure.

The Dorick Base in Perspective.

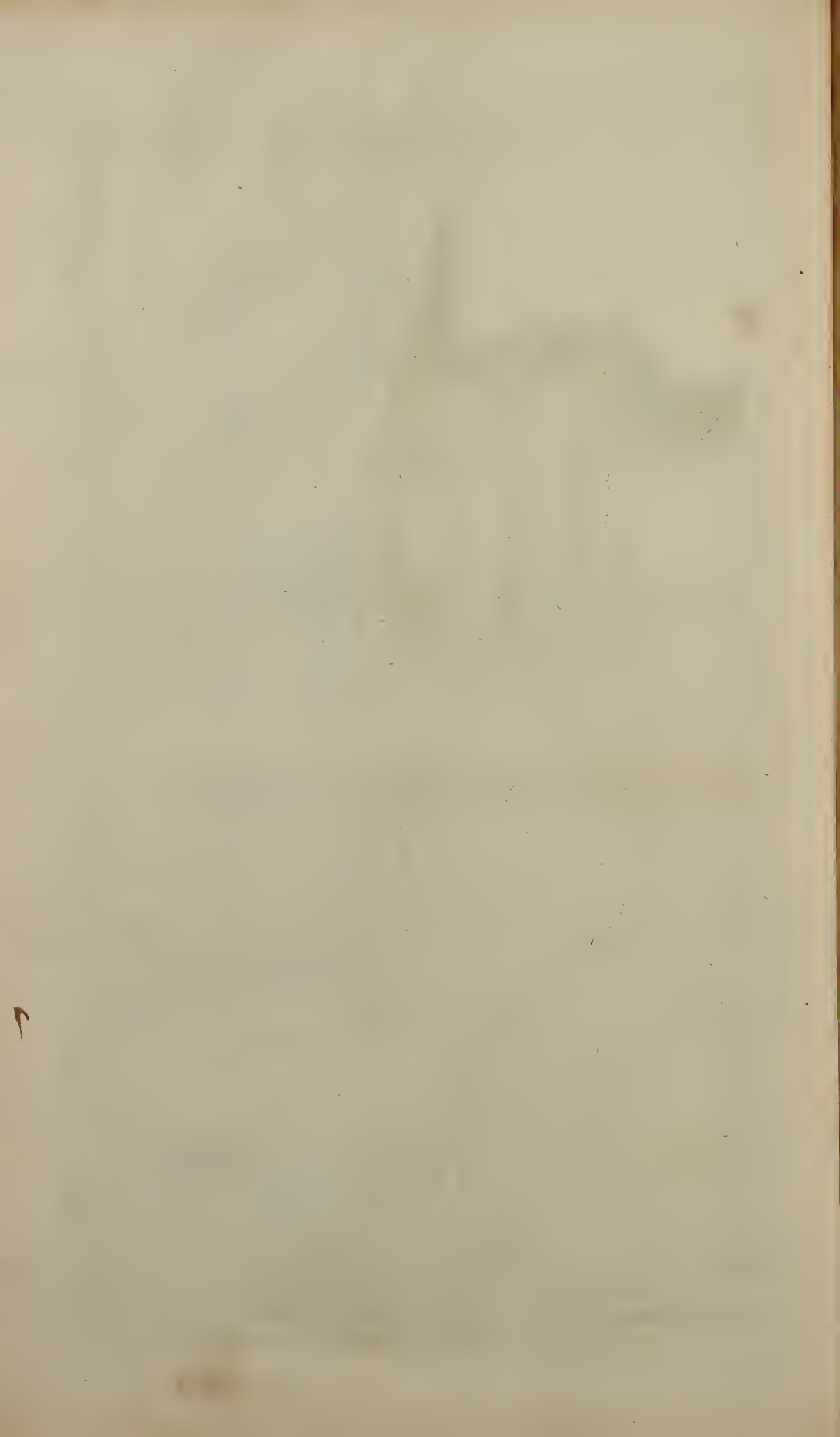


HAT you may not be tir'd
with practising one and the
same thing, I have here, for
Variety-sake, inverted one
of the Bases. Both of 'em
are drawn after the Man-
ner explain'd in the foregoing Figure;
which is so evident from the occult Lines
of the Plan and Elevation here given, that
I think it superfluous to say any more of it.

FIG. XVII.



Mod. 2



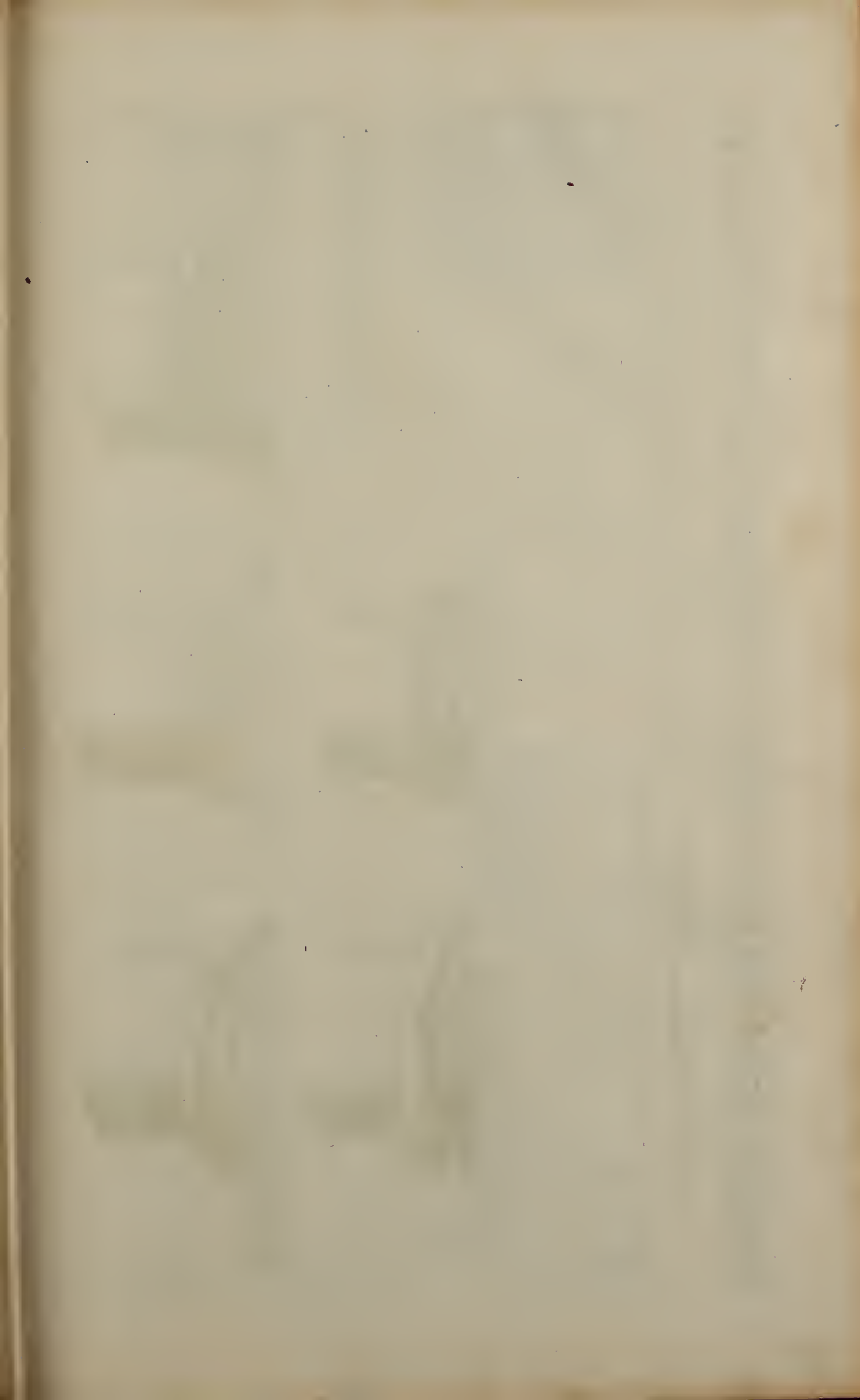


FIG. XVIII.

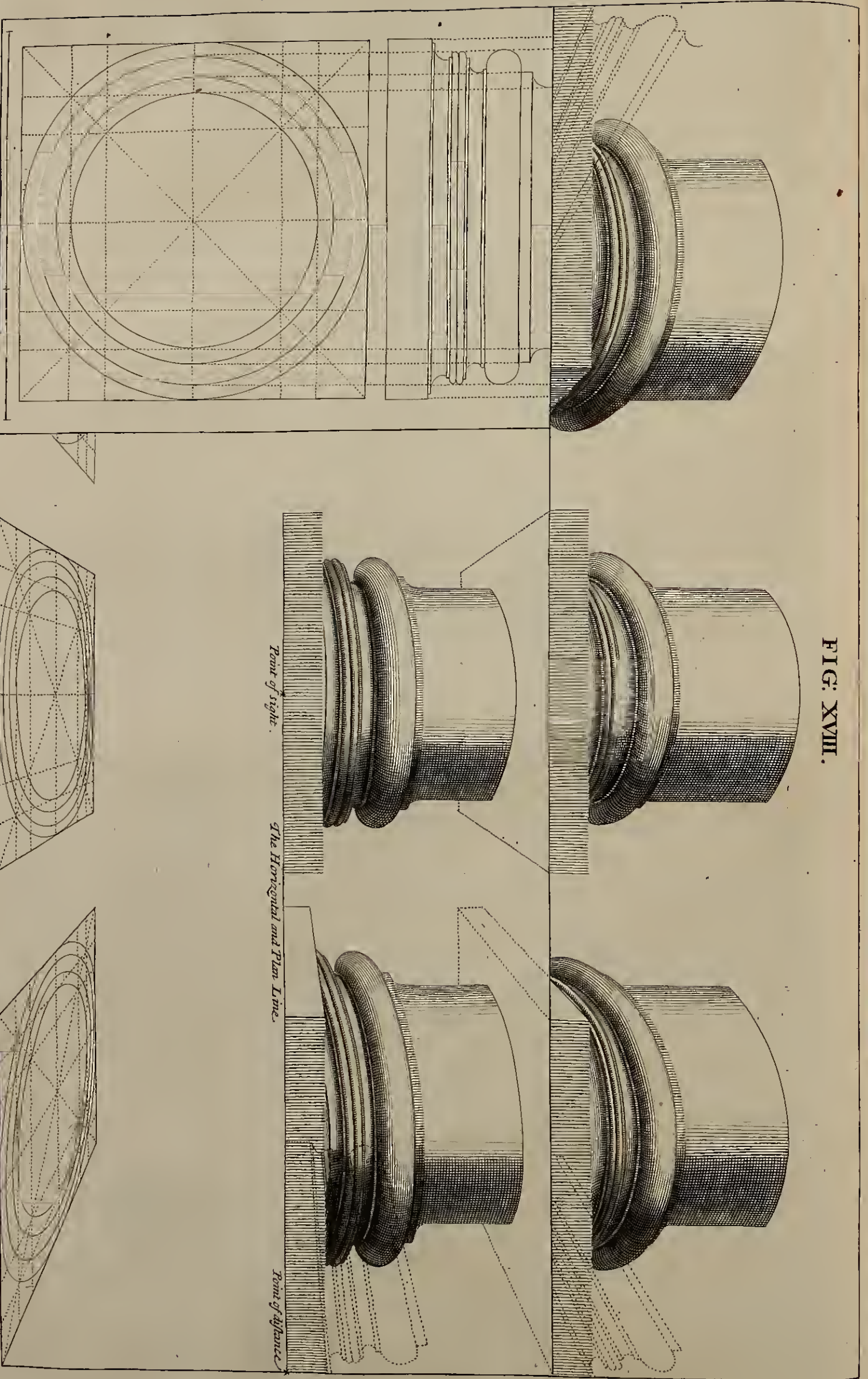


Figura Decima octava.

Optica delineatio basis Ionicae.



X multitudine ac varietate figurarum huius Operis, discas, mi Lector, modum deformandi res demissas & sublimes, magnas & parvas. In hac figura, linea cui bases duarum columnarum incumbunt, est conjunctim linea plani, & linea horizontalis; linea cui bases trium columnarum incumbunt, est altior linea horizontali. Quemadmodum autem, si linea plani sit inferior linea horizontali, lineæ quæ tendunt ad punctum oculi & ad punctum distantie, ascendant sursum; ita si linea plani sit superior horizontali, lineæ quæ veniunt ad punctum oculi & ad punctum distantie, tendunt deorsum. Quod si in eadem tabula sint plura plana, eorumque aliqua sint altiora, alia verò demissiora linea horizontali, lineæ omnes planorum, ac linea horizontalis, sunt invicem parallele; adeoque ex linea, quæ omnes eas normaliter secet, statim dignosci potest, in qua proportione, singula plana sint altiora vel profundiora linea horizontali. Velim quoque observes, latitudinem columnæ mediæ, minorem esse latitudine columnarum lateraliarum; & discrimen inter huiusmodi latitudines eò esse majus, quò punctum distantie fuerit vicinius puncto oculi. Quæ dicta sunt de columnis, intelligere oportet de basibus, & de optica delineatione amborum. Nihilominus, si figura ex debito puncto inspicitur, columnæ pictæ habebunt eandem apparentiam, quam haberent columnæ solide, invicem æquales.

The Eighteenth Figure.

The Ionick Base in Perspective.



Y the Multitude and Variety of Figures in this Work, the Reader will be instructed in delineating things, however different in Size or Situation. In this Figure, the Line on which the two Columns rest, is both the Horizontal and the Ground-line; that on which the three Columns are plac'd, is so much higher than the Horizontal Line. And as, where the Ground-line is beneath the Horizontal, the Lines drawn to the Points of Sight and Distance tend upwards; so, where the same is above the Horizontal, the Lines to the Points of Sight and Distance tend downwards. If in the same Picture there are different Grounds, some higher, others lower than the Horizontal Line; yet are all those Ground-lines, and the Horizontal, parallel one to another; and therefore, by a Line cutting them all perpendicularly, you presently know in what proportion each Plan or Ground is higher or lower than the Horizontal. I would have you observe, That the Breadth of the middle Column is, by the Perspective, render'd less than that of the Side-Columns; and that this Difference is the greater, as the Point of Distance approaches nearer to the Point of Sight. What has been said of the Columns, is also to be understood of the Bases, and the Projections of all their Parts in Perspective: Nevertheless, if the Picture be view'd from its due Place, the Columns will have the same Effect, as if solid; and all appear equal one to the other.

Figura Decimanona.

Optica imminutio basis Corinthiæ:



AEC basis juxta regulas traditas optice contracta est. Porro altitudo superficiei *A* est eadem cum altitudine lineæ visualis *CD*; latitudo crucis *A* est eadem cum latitudo

titudine crucis secundi circuli vestigi *B*, incipiendo à minimo omnium. Due lineæ normalliter infixæ basi, ostendunt maximam latitudinem quam habere debet columna supra ipsum scapum. Maxima latitudo tori superioris & utriusque astragali, est eadem cum maxima latitudine tertii circuli. Maxima latitudo tori inferioris est eadem cum maxima latitudine ultimi circuli.

The Nineteenth Figure.

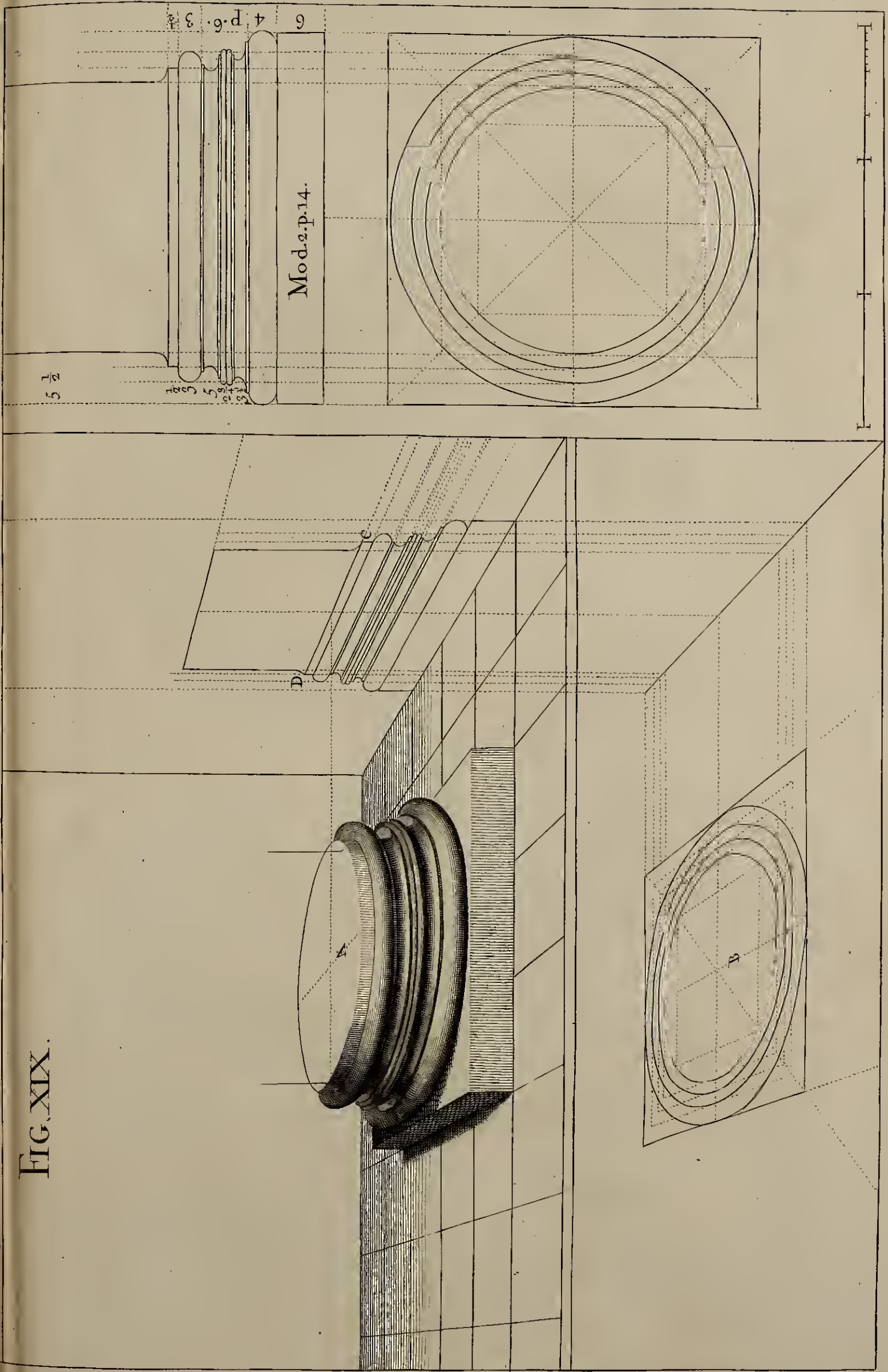
The Corinthian Base in Perspective.



HIS Base is put in Perspective by the Rules before laid down. The Height of the Superficies *A* is the same with that of the visual Line *CD*; the Breadth

of the Cross *A* is the same with that of the second Circle of the Plan *B*, beginning with the least. The two Lines that stand perpendicularly on the Surface of the Base, shew the greatest Breadth of the Columns Shaft above the Fillet. The Extent of the upper *Torus* and the two *Astragals*, is the same with that of the third Circle; and the Extent of the lower *Torus* is the same with that of the outward Circle.

FIG. XIX.



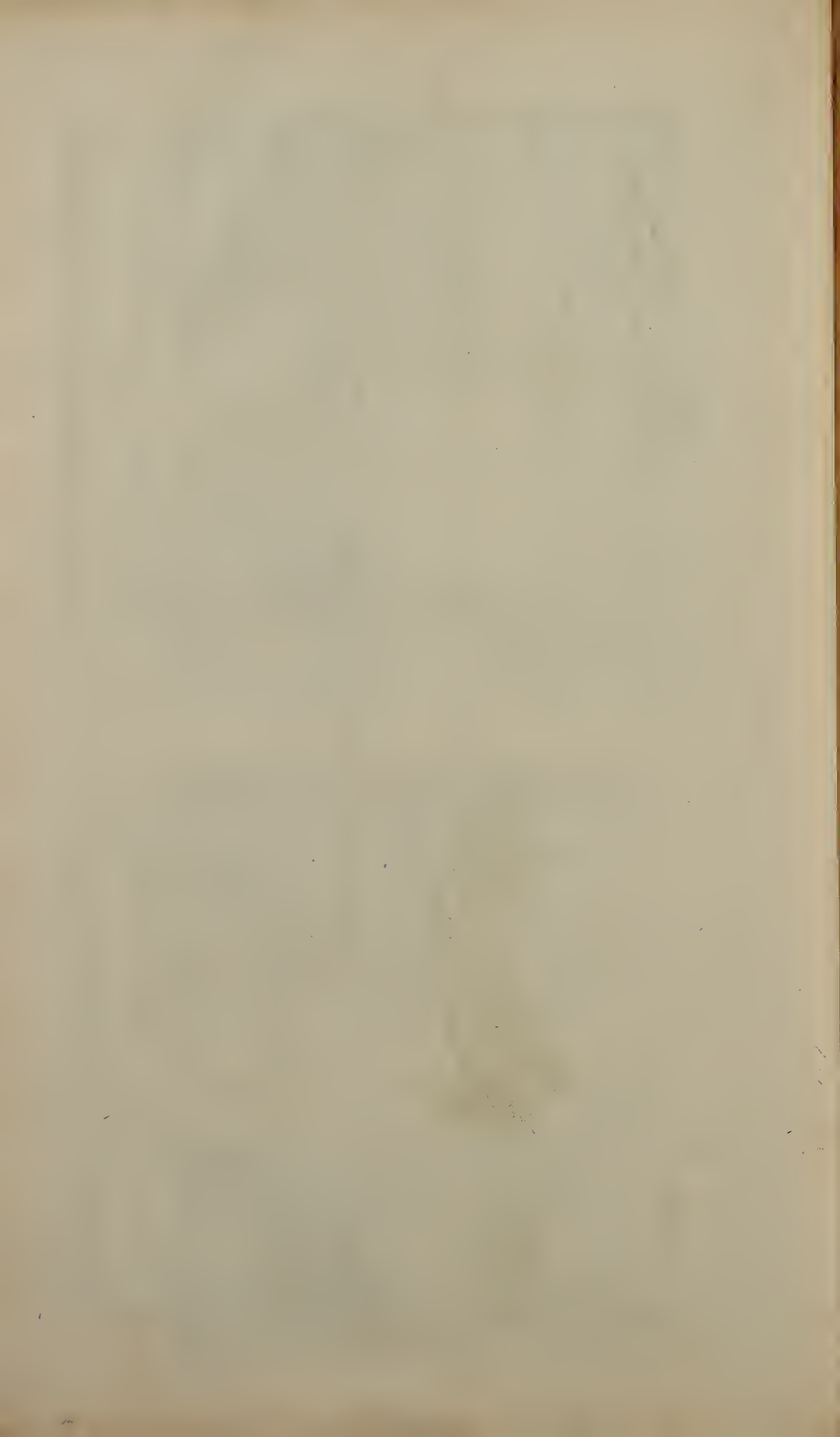
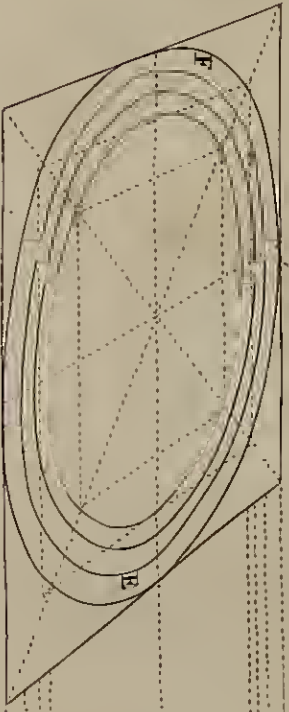
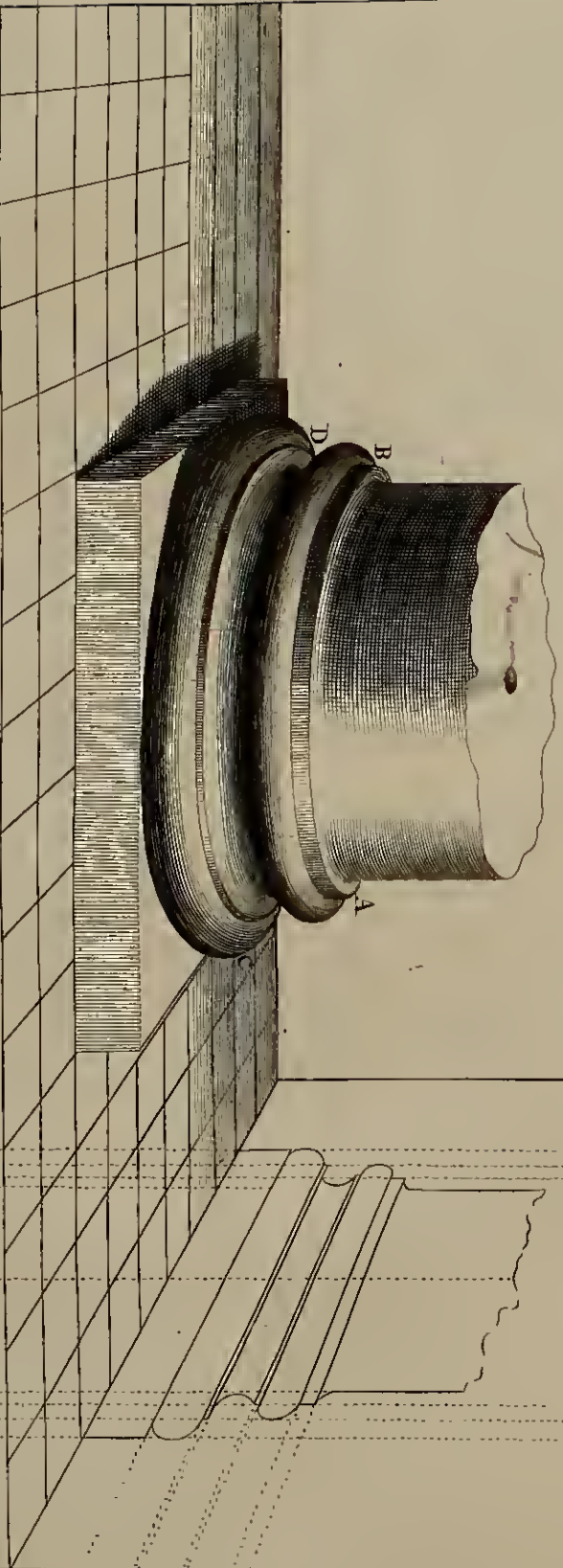


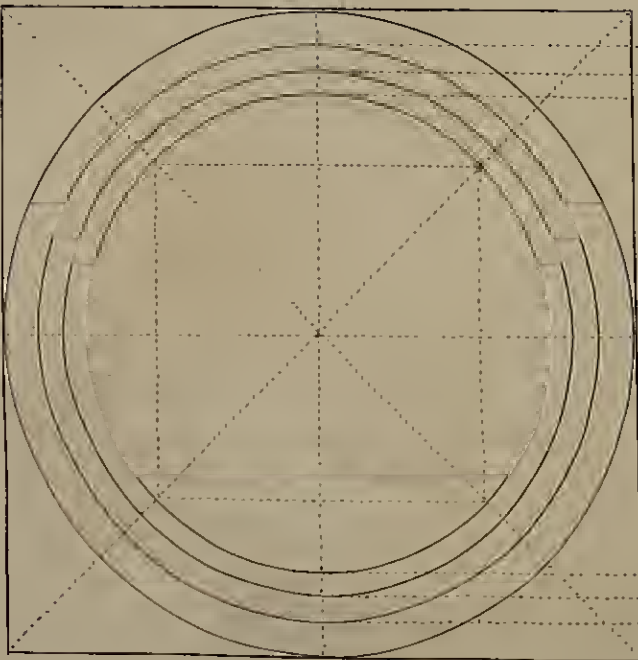


FIG. XX.



Mod. 2.

Mod. 2. p. 14.



6 4 $\frac{1}{2}$ 3 3 $\frac{1}{2}$ $\frac{1}{2}$

FIGURA Vigesima.

Basis Atticurga. optice imminuta.



*ASIS Atticurga Pictoribus
præ reliquis familiaris est,
quia cum omnibus ferè Ordini-
bus egregiè consentit. Por-
rò ex punctis E & F maxi-
mæ utrinque latitudinis exti-
mi circuli vestigiis, habetur maxima latitudo
tori inferioris CD. Ac cætera quæ spectant
ad ipsum & ad torum AB, petenda sunt ex
dictis de basi Etrusca.*

The Twentieth Figure.

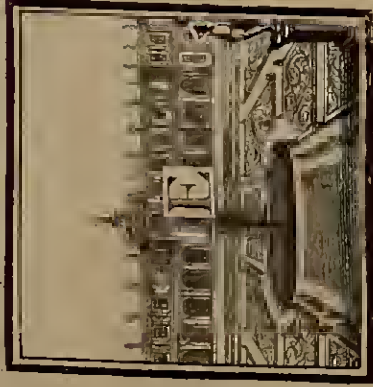
The Attick Base in Perspective.



THE Attick Base is more frequently made use of by Painters, than any other; because it suits well with most of the Orders. The Points E and F, the greatest Breadth of the outward Circle of the Perspective-Plan, give the greatest Breadth of the lower Torus CD. And whatever else relates either to this or the upper Torus AB, is to be sought in the same Manner, as has been shewn in the Tuscan Base.

Figura Vigesima prima.

Optica imminutio capitelli Etrusci.



*ADEM cum reliquis formâ,
eâdemque methodo capitella
delineanda sunt: quum ba-
beant ipsa quoque suum ci-
matium quadratum, & sint
rotunda. Linea plani solet*

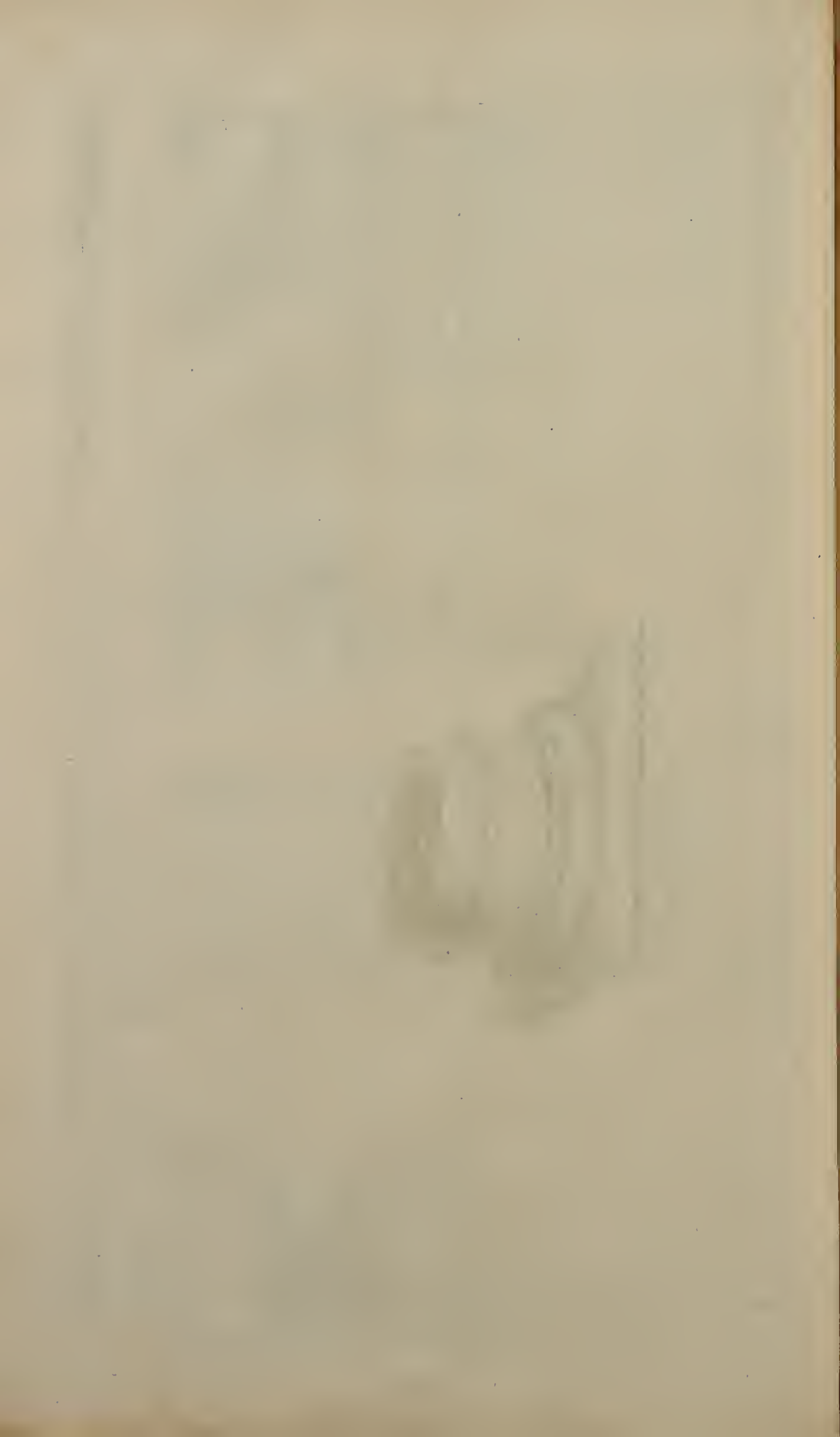
*in eis fieri altior lineâ horizontali: quia quum
capitella imponenda sint columnis homine at-
tioribus, plerumque apparent sublimiora nostris
oculis.*

The Twenty-first Figure.

The Tuscan Capital in Perspective.



THE Manner before deli-
ver'd concerning Bases, is
of the same Use in deline-
ating Capitals; forasmuch
as these also have their
square *Abacus*, and their
round Members. The Ground-line in
Capitals is usually plac'd above the Hori-
zon; because when they are set upon Co-
lumns which exceed a Man's Height, they
are generally represented above the Eye.



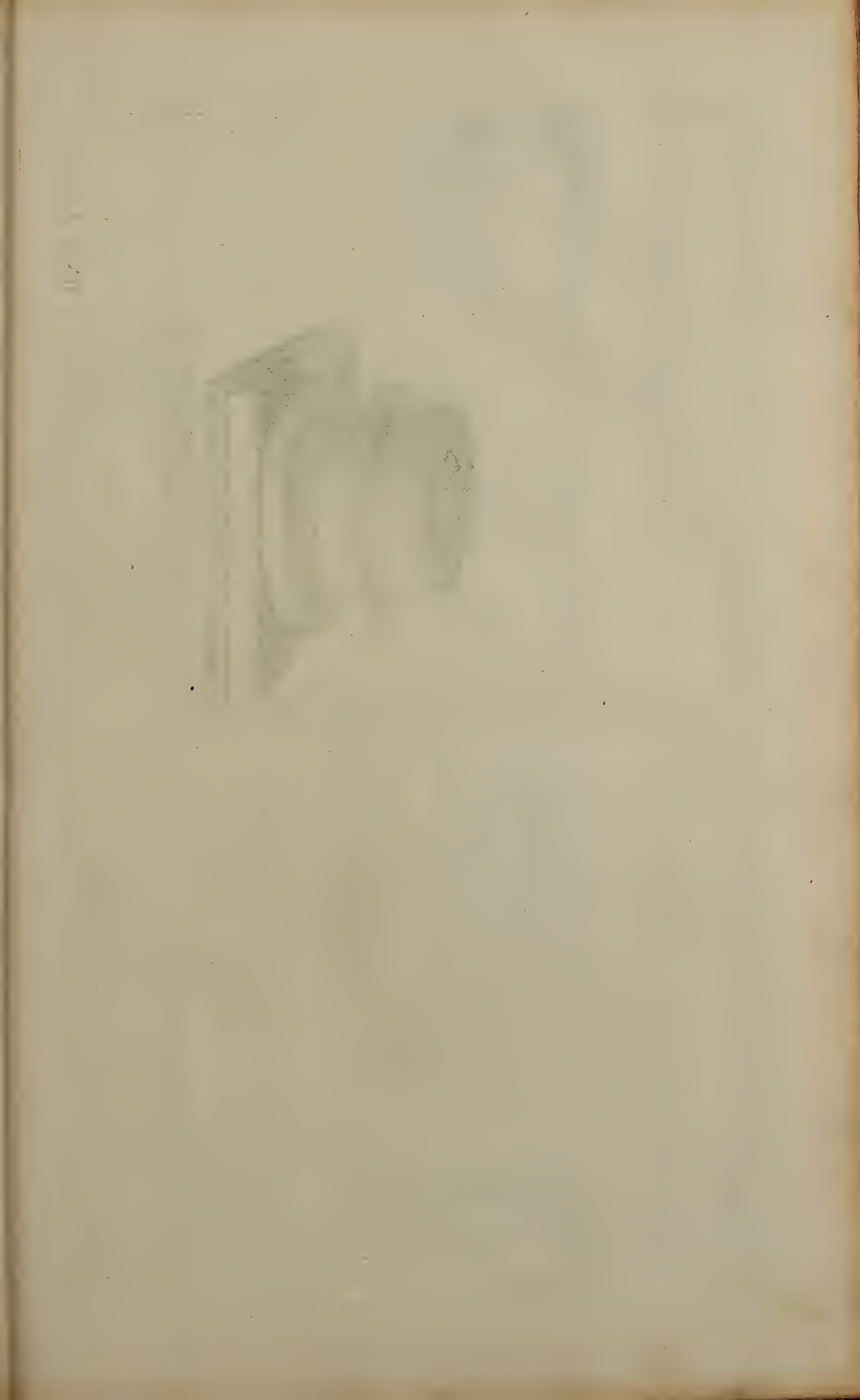


Figura Vigesima secunda.

Optica projectio capitelli
Dorici.



A P I T E L L U M hoc pluribus
membris constat, adeoque o-
perosus est quam precedens.
Nihilominus accurata delinea-
tio vestigii geometrici omnes
difficultates complanabit.

Twenty-second Figure.

*The Projection of a Dorick Capital,
in Perspective.*



HIS Capital consisting of
more Members than the
foregoing, will be more
troublesom to put in Per-
spective; but an accurate
Delineation of the Geo-
metrical Plan will certainly remove many
seeming Difficulties.

Figura Vigefimateria.

Deformatio capitelli Ionici.



APITELLUM Ionicum pofcit duas elevationes geometricas diftinctas, alteram faciei, alteram lateris; ex iisque confatur veftigium geometricum A, quod optice contrahitur, translatis in B punctis latitudinis C, & in E punctis longitudinis D more confueto: ut ex punctis B latitudinis, lineae tendant ad punctum oculi; ex punctis vero E longitudinis, lineae tendant ad punctum diftantiae.

Ex veftigio capitelli optice contracto eruenda eft elevatio longitudinis ut in figura. Ex utrifque vero juxta morem fiet capitellum nitidum, acceptis latitudinibus ex veftigio, altitudinibus ex elevatione longitudinis. Haec quoque dabit maximam latitudinem fingularum volutarum.

Modum delinendi capitellum Ionicum, in quo helices volutarum obliquentur, dabimus infra figurâ trigefimâ.

Twenty-third Figure.

The Ionick Capital in Perspective.

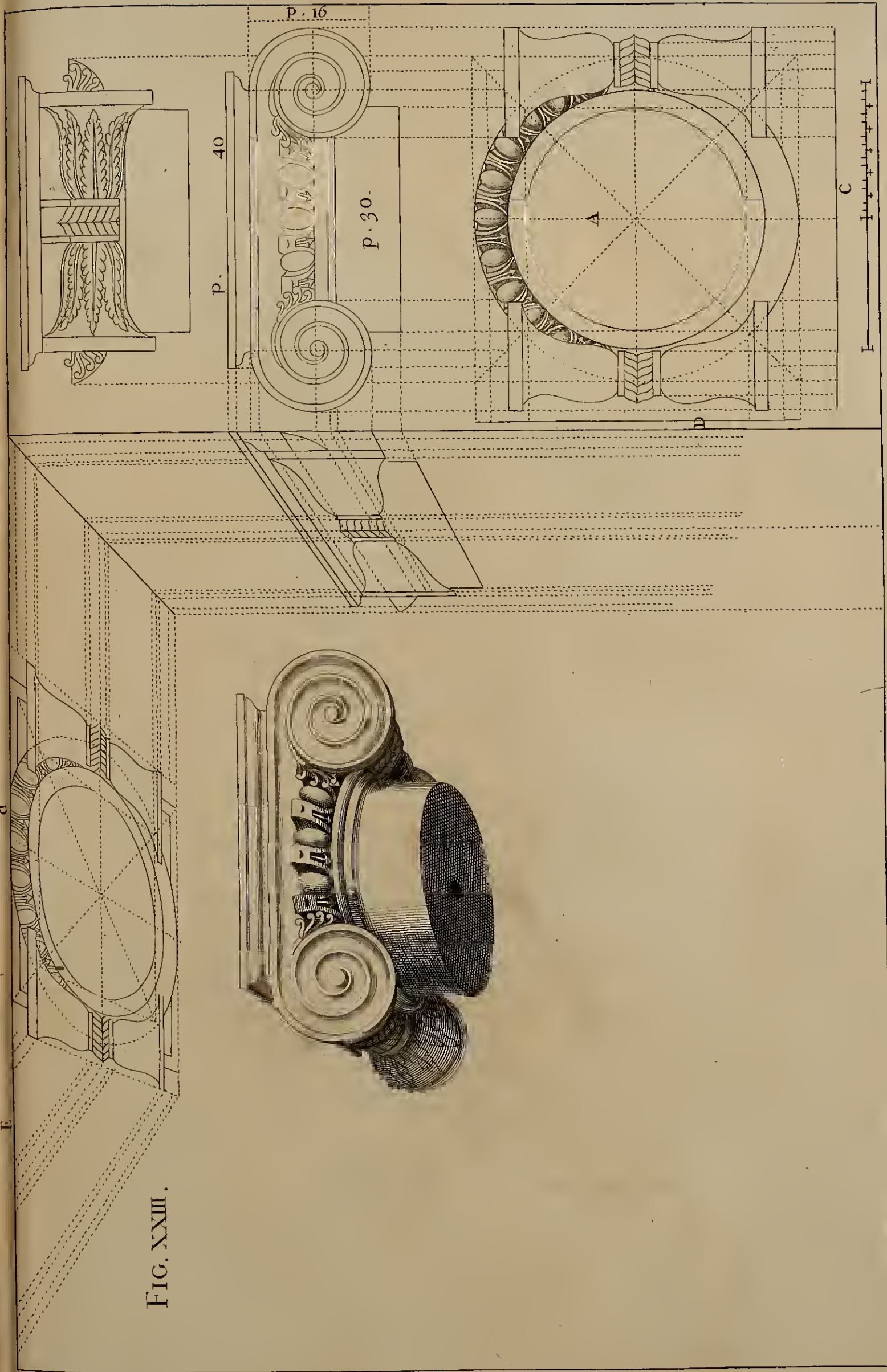


THE Ionick Capital requires two diftinct geometrical Elevations, one of the Front, the other of the Side; from both which is found the geometrical Plan A, which is put in Perspective by transferring into B the Points of Breadth C, and into E the Points of Length D, after the ufual Manner; that from the Points of Breadth B, Lines may be drawn towards the Point of Sight; and from the Points of Length E, towards the Point of Distance.

From the Plan of the Capital in Perspective, is to be drawn the Upright of the Length, as in the Figure; and from both, as usual, the finished Capital is wrought, by taking the Breadths from the Plan, and the Heights from the Elevation; this giving the utmost Height, and that the utmost Breadth of each of the Volutes.

The Manner of describing the Ionick Capital, whose Volutes lie obliquely, we shall hereafter treat of in the Thirtieth Figure.

FIG. XXIII.



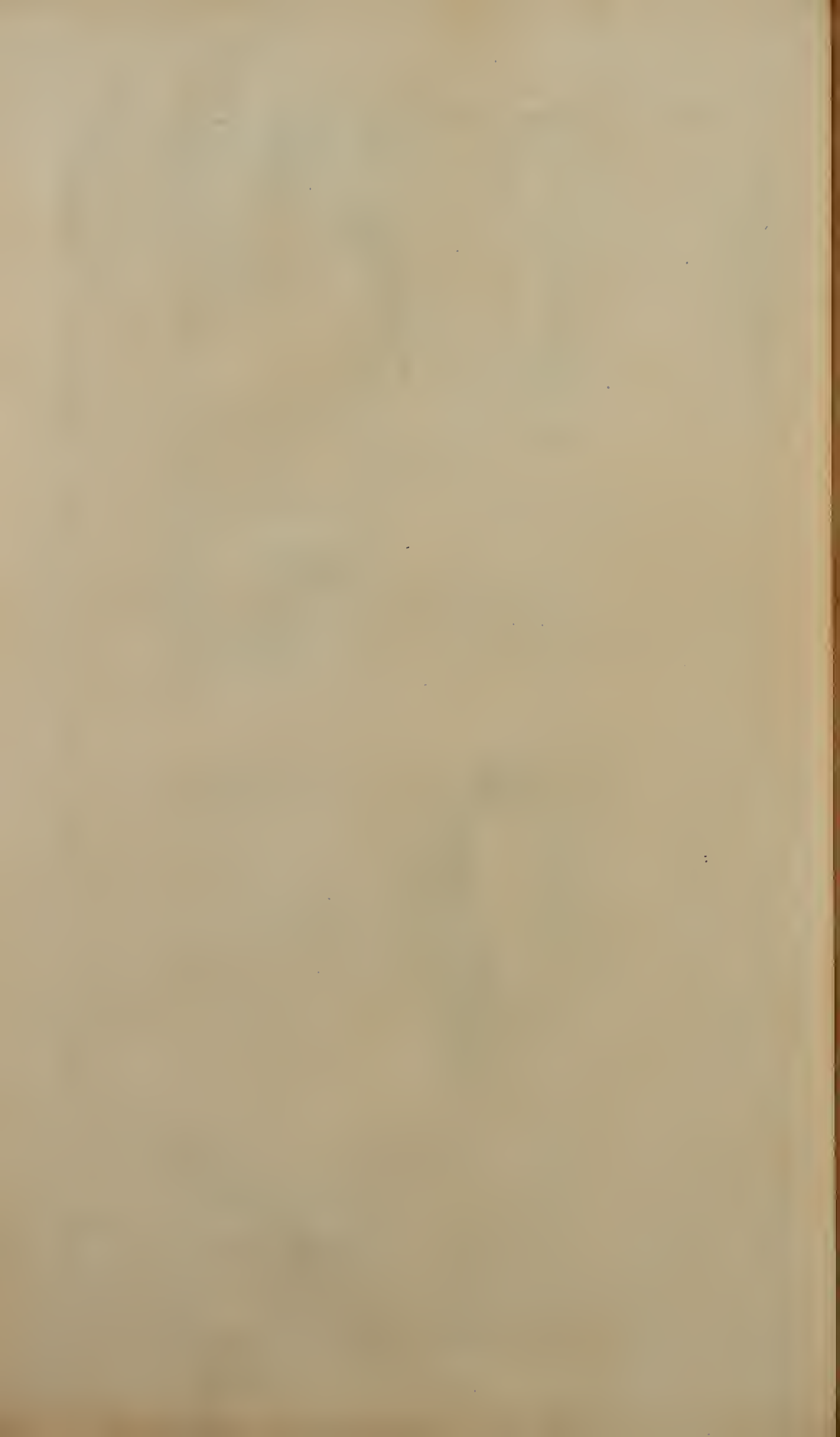
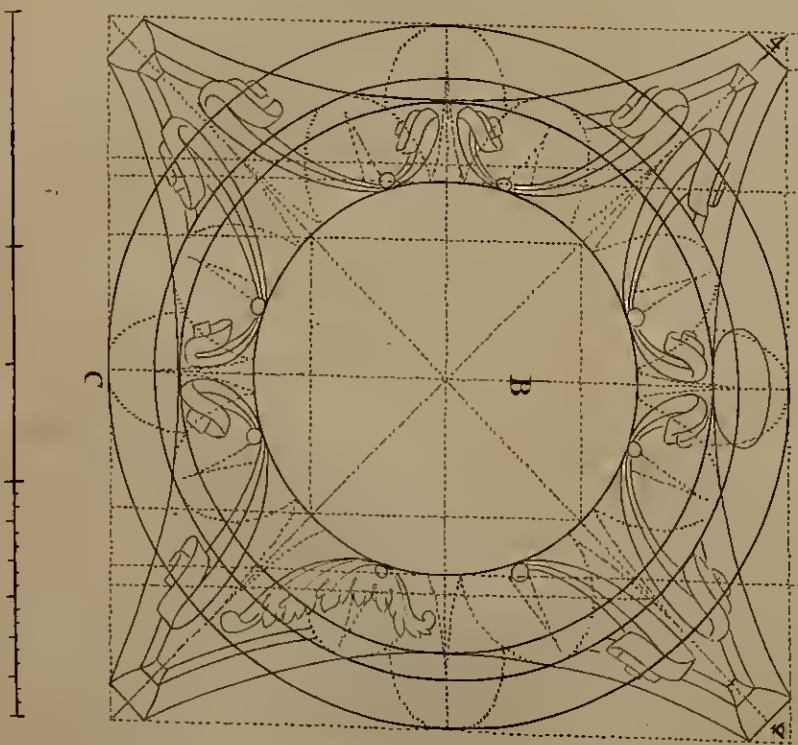
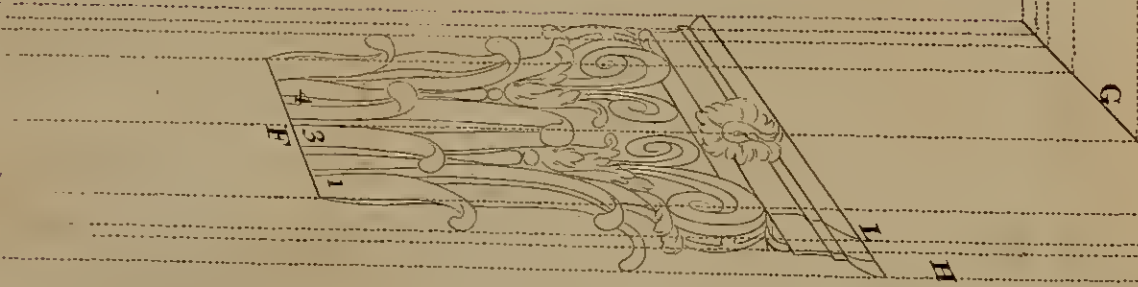
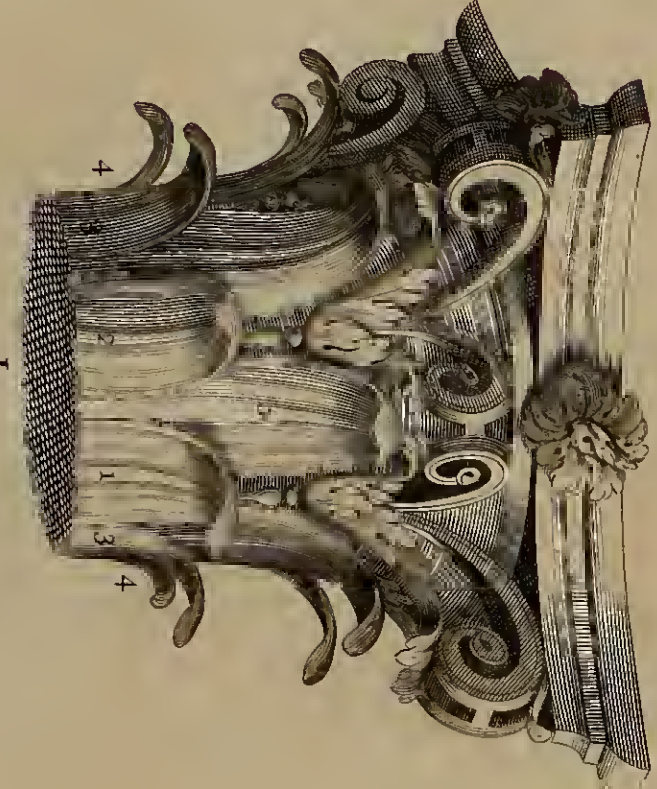




FIG. XXIV



M. 2: P. 17.

M. 1: 3.

Figura Vigesimaquarta.

Optica projectio capitelli Corinthii.



APITELLM Corinbium absolvere non poteris, nisi elevatione geometrica ejusque vestigio exactissime delineatis juxta regulas Baroczi.

Ad formandum ex vestigio B vestigium E, re-
ctis oculis sicut quadrata necessaria ad contra-
stionem opticam quatuor vel trium saltem circulo-
rum; translatis in lineam D divisionibus lineæ C,
et aliis, more consueto. Contrahentur deinde lineis oculis vestigia foliorum, et
absolventur cetera quæ posita sunt in vestigio E.

Ut fiat optica elevatio longitudinis F, in lineam perpendicularem H trans-
ferentur ex elevatione A omnes ejus divisiones. Complebitur autem per lineas
rectas, quæ ex punctis divisionum ducuntur ad punctum oculi, ac per rectas
ex circulorum summitate ac profunditate, quæ rectæ sunt parallele ad lineam D,
ac perveniant ad visivalem G; indeque descendant, ac sint parallele ad line-
am perpendicularem H.

Capitellum nitidum exordieris ab infimo circulo I, ostendente ambitum co-
lunnæ. Succedent folia 1, 2, quorum latitudines accipientur ex vestigio E per
circinum, posita unâ ejus cusvide in linea H; altitudines verò accipientur ex
elevatione F, posita una cusvide circini in linea D. Id ipsum dico tum de fo-
liis 3, 3, 4, 4, tum de folio 5, ac de aliis, et demum de cymatio. Descen-
sus verò lineæ curvæ ipsius cymatii incipiet ex acie L.

Twenty-fourth Figure.

The Corinthian Capital in Perspective.



HERE is no Completing the Corinthian Cap-
ital, unless you most accurately describe its
Geometrical Elevation and Plan, according to
the Rules of *Vignola*.

Being to form the Plan E from the Plan B,
you must, with occult Lines, make the Squares
necessary for bringing four, or at least three of
the Circles into Perspective; transferring into
of the Line C, and the rest as usual. Then,
with other occult Lines, contract the Plans of the Leaves, and finish
what's farther requisite in the Plan E.

To make the Optical Elevation of the Length F, you must transfer in-
to the Perpendicular H all the Divisions of the Elevation A; and com-
plete the same, by Lines drawn toward the Point of Sight, till they meet
their respective Perpendiculars; which proceeding from all parts of the
Circles parallel to the Line D, intersect the Visual G; from whence they
descend, Parallels to the Perpendicular H.

In working the clean Capital, you should begin with the lowest Cir-
cle I, which denotes the Compass of the Column. Then make the
Leaves 1, 2, by taking their Breadths from the Plan E, with the Com-
passes, and keeping one Point of them upon the Line H; and their
Heights from the Elevation F, keeping one Point on the Line D. The
same must be done, as well by the Leaves 3, 3, 4, 4, as by the Leaf 5,
and the others; and last of all, by the *Abacus* also; the Sinking of the
Horns whereof answers that of the visual Line L.

Figura Vigesimaquinta.

Optica descriptio capitelli Compositi.



*X*is que diximus de capitulo Corinthio, didiceris modum faciendi capitellum Compositum. Velim autem tibi persuadeas, cum lectione harum regularum quæ sunt magistri inanimæ, circini usum perpetuò conjungi oportere. Hic enim vivi magistri defectum unice supplere potest.

The Twenty-fifth Figure.

The Composite Capital in Perspective.



ROM what has been said of the *Corinthian Capital*, may be learnt the *Manner* of putting the *Composite* also into *Perspective*. I wish

I could prevail with you, that to the *Reading* of the *Rules*, which in themselves are but *lifeless Masters*, you would constantly add a *diligent Practice* of the *Figures* by the *Compasses*; this being the only way to supply the *Want* of a *living Master*.

FIG. XXV.

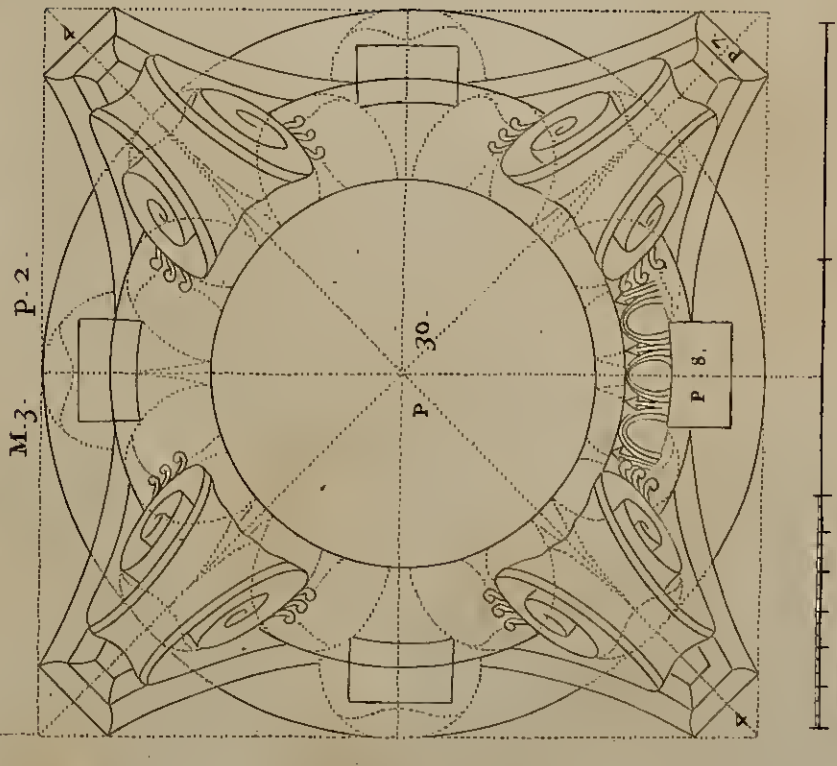
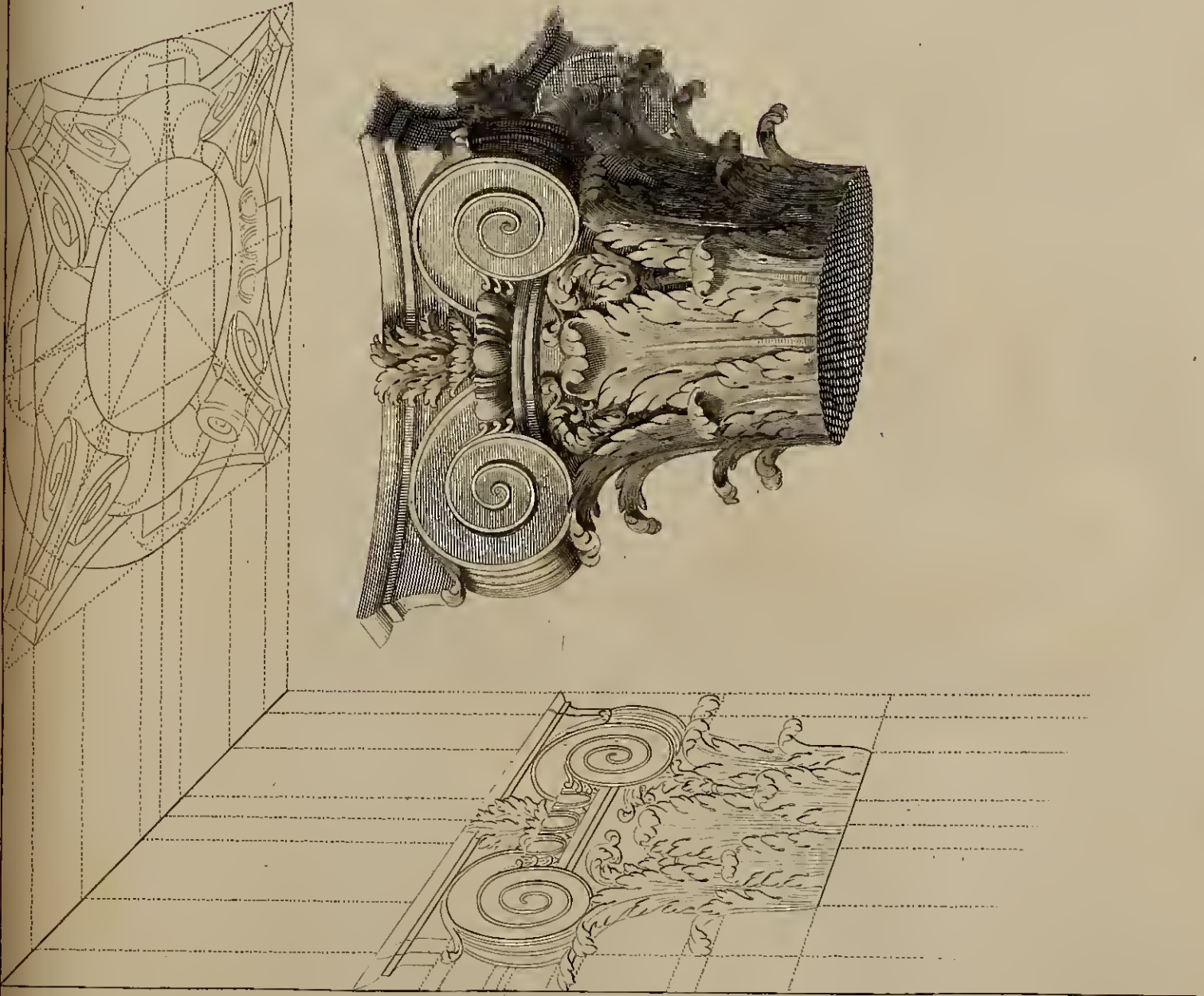




FIG. XXVI.

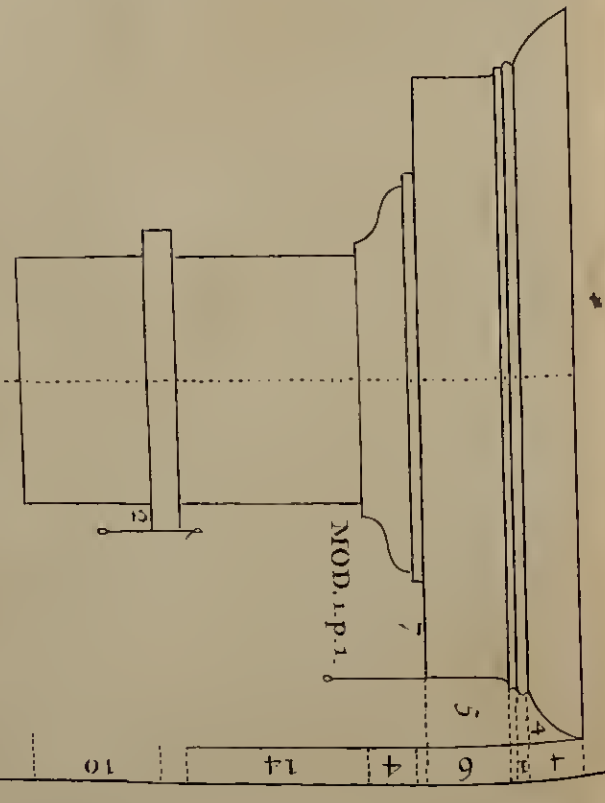
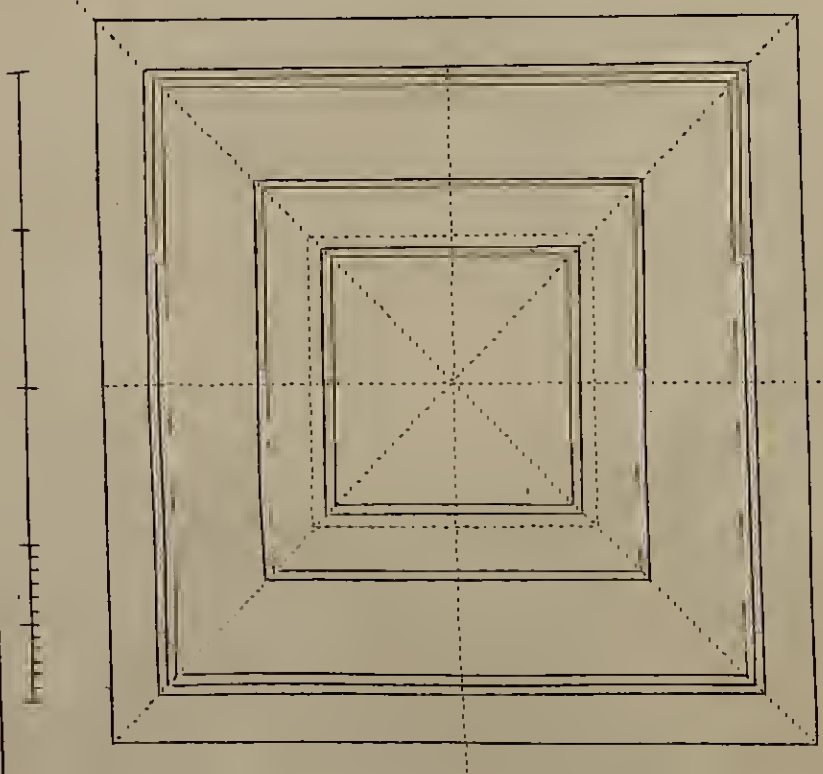
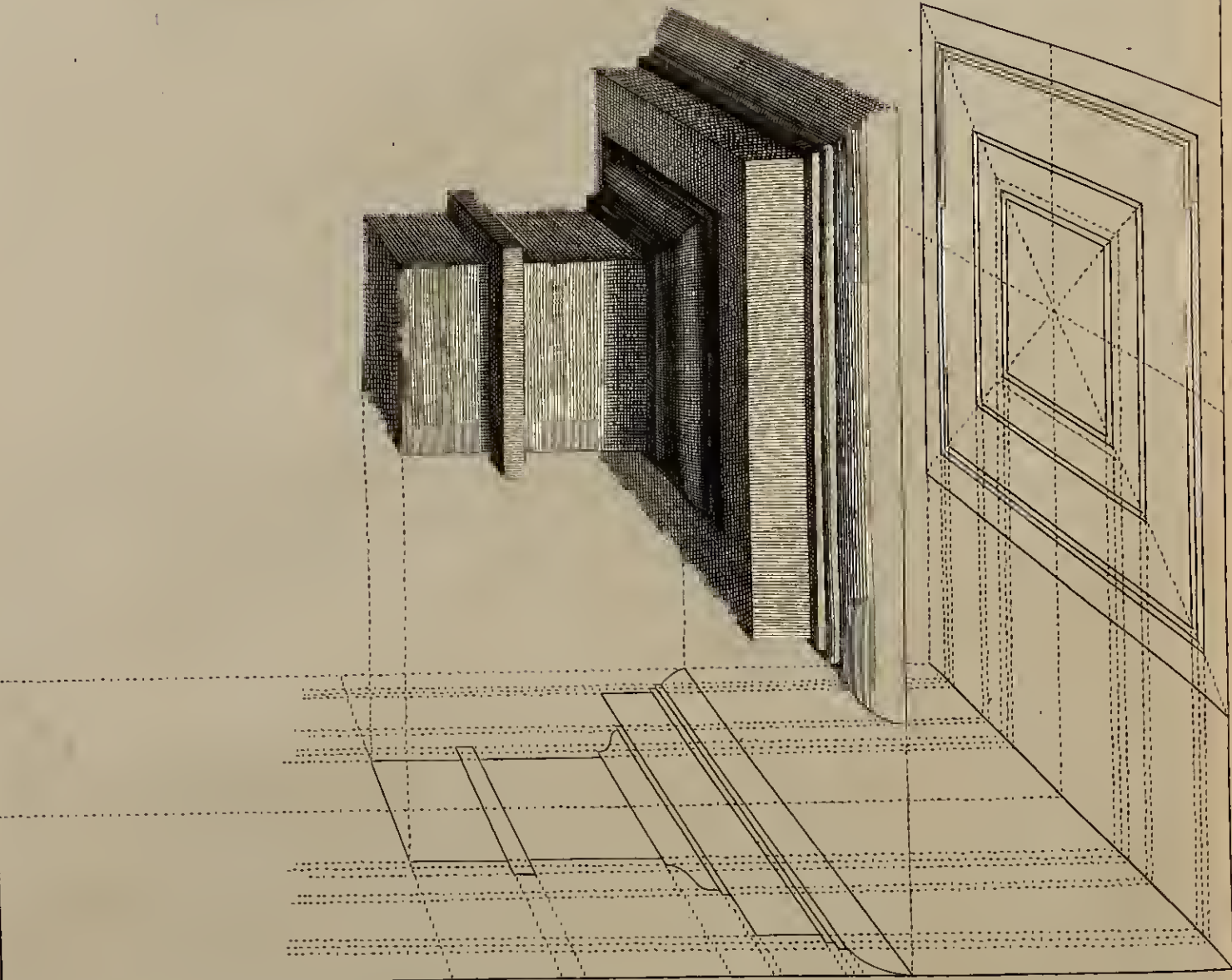


Figura Vigesima sexta.

Deformatio coronicis Etruscæ.

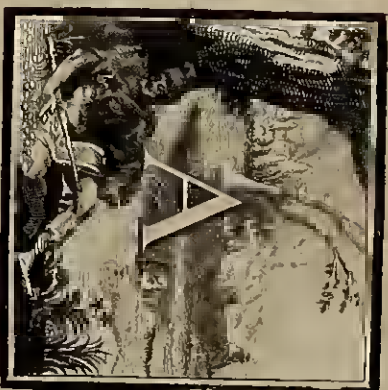


OST capitella sequuntur coronicæ, quæ utpote quadratæ, minimam habent arduitatem. Inter coronicæ verò, nulla est Etruscâ simplicior ac facilior. Ex elevatione geometricâ, mo-

re solito, formatur vestigium geometricum; eoque optice contracto eruitur similis elevatio longitudinis. Demùm ex elevatione & vestigio componitur coronix nitida. Memineris autem duas esse lineas, quæ hinc inde terminant latitudinem elevationis optice. Linea quæ altior est, dat altitudinem anterioris faciei coronicis, alia quæ est depressior, dat altitudinem faciei posterioris. Et ita erit in posterum.

Twenty-sixth Figure.

The Tuscan Entablature in Perspective.



FTER Capitals we proceed to Entablatures, which because they are square, are less difficult than the former. And of all Entablatures, that of the Tuscan

Order is the most simple and easie to be put in execution. From the Geometrical Upright is drawn, as usual, the Geometrical Plan; from the Plan put in Perspective is describ'd the Optick Elevation of the Length; and from both the latter is wrought the clean Entablature requir'd. You may observe, here are two Lines that terminate the Breadth of the Perspective on one side and the other. The Line which proceeds from the higher Corner of the Visual, gives the Height of the most advanc'd Part; that from the lower determines the Height of the Back-part. And, so for the future.

Figura Vigesima Septima.

Optica delineatio coronicis Doricæ.

N faciendâ coronicæ Doricâ, que majorem operam poscit, ob denticulos & triglyphos; communis regula servanda est. Si autem libeat coronicem nitidam describere in papyro

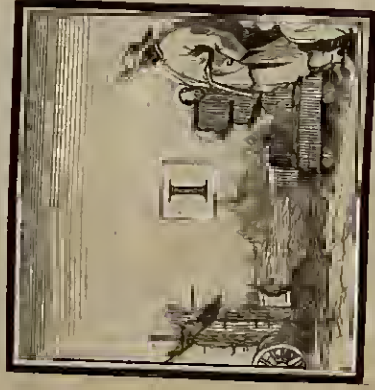


Separatâ ab ejus præparationibus, id profectò licet, tum in hoc, tum in quocunque alio Schemate.

Twenty-seventh Figure.

The Dorick Entablature in Perspective.

N making the Dorick Entablature, which has something more Work in it than the former, on account of its Dentels and Triglyphs; the common



Rule is to be observ'd. And if you would delineate the finish'd Entablature in a Paper distinct from that of its Preparations, you are at liberty so to do, either in this or any other Figure.

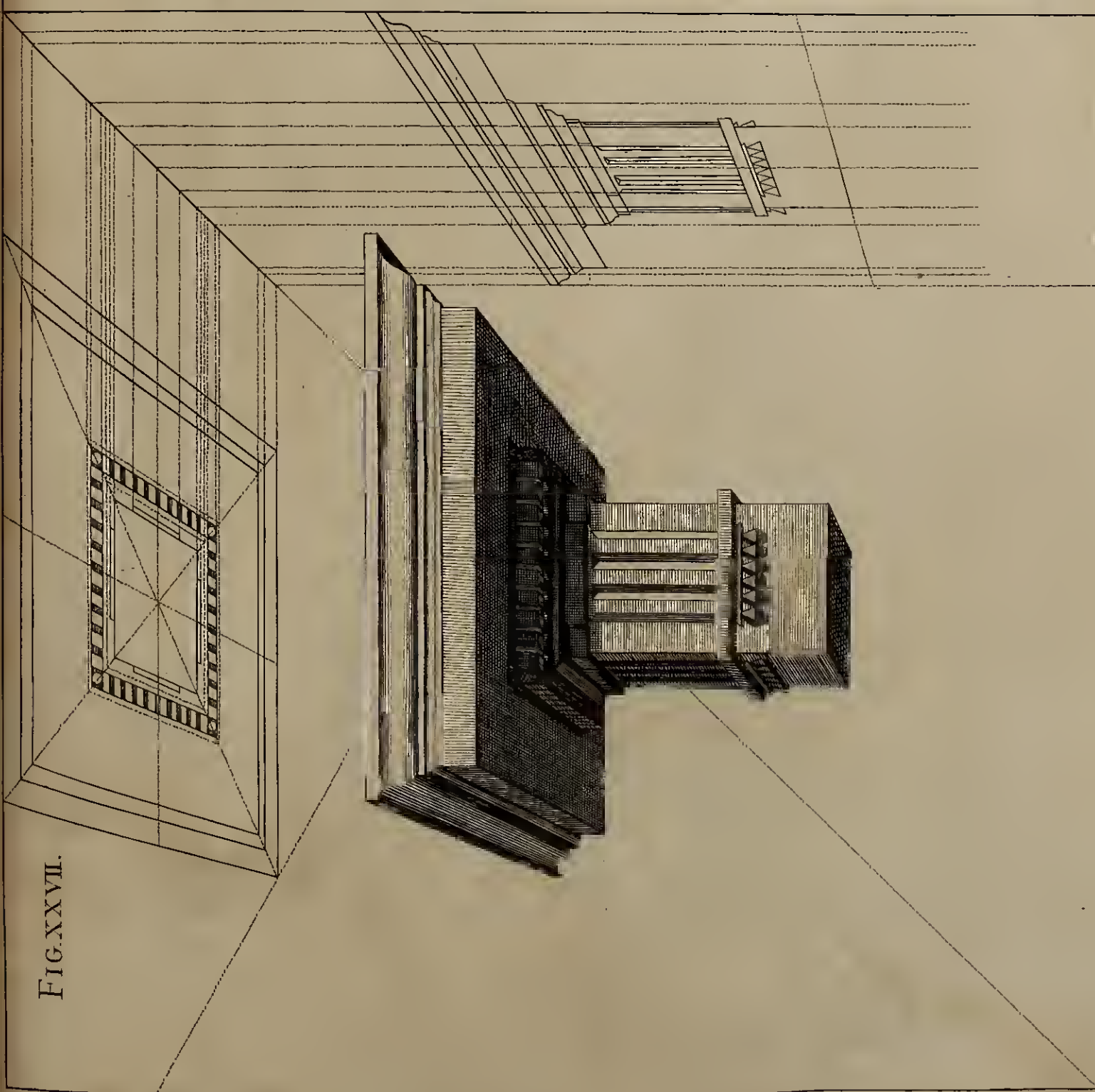
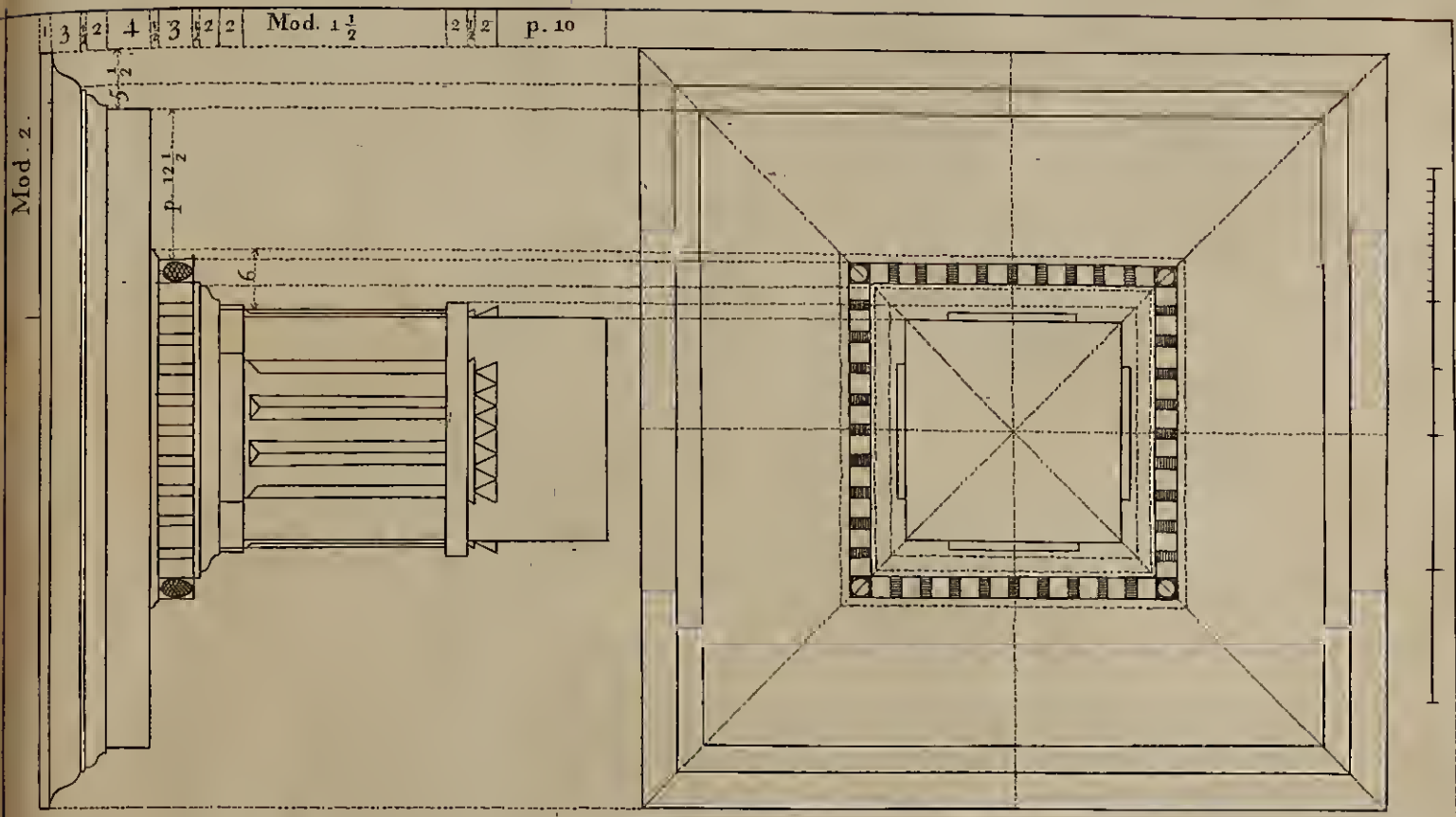


FIG. XXVII.

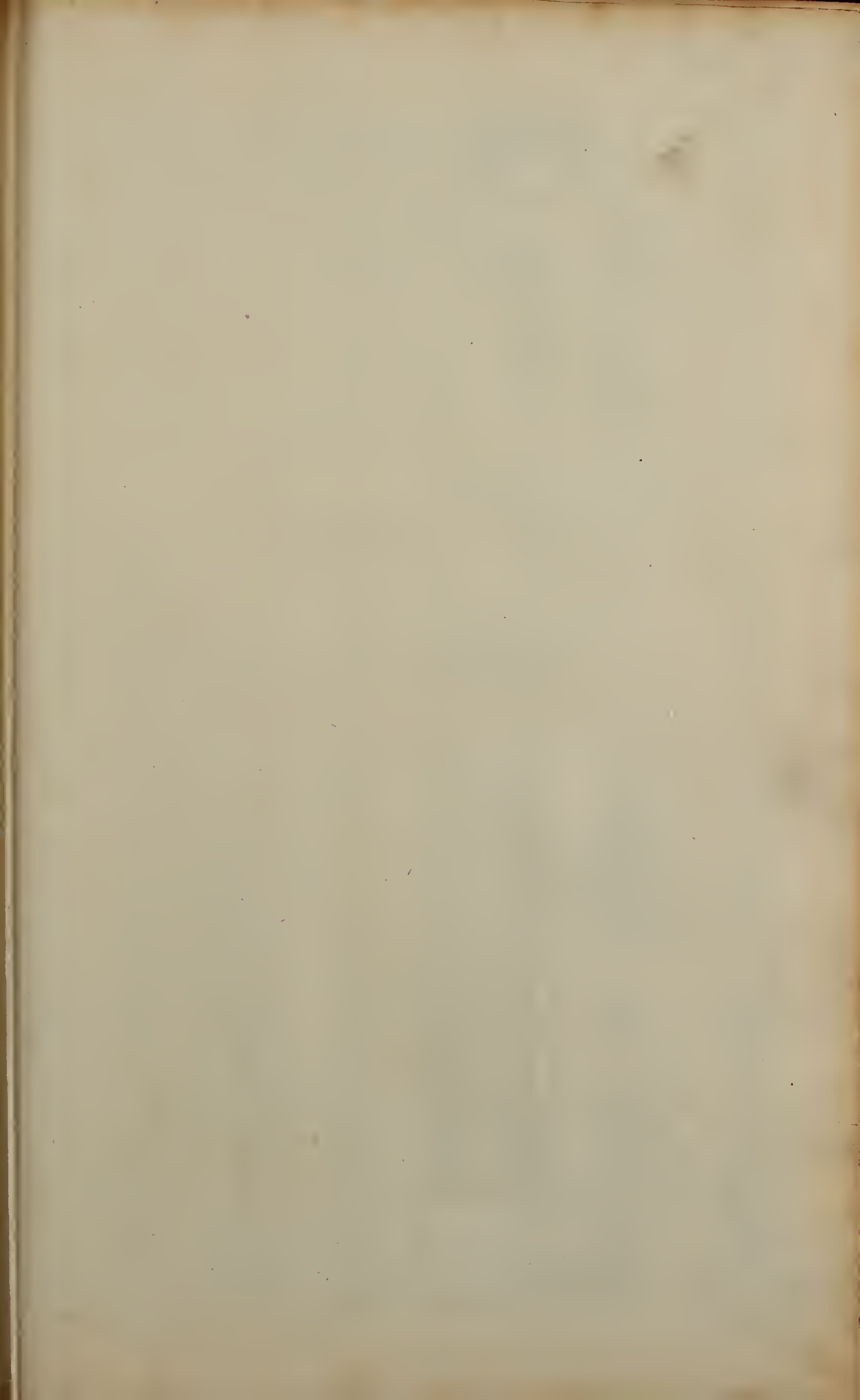


FIG. XXVIII.

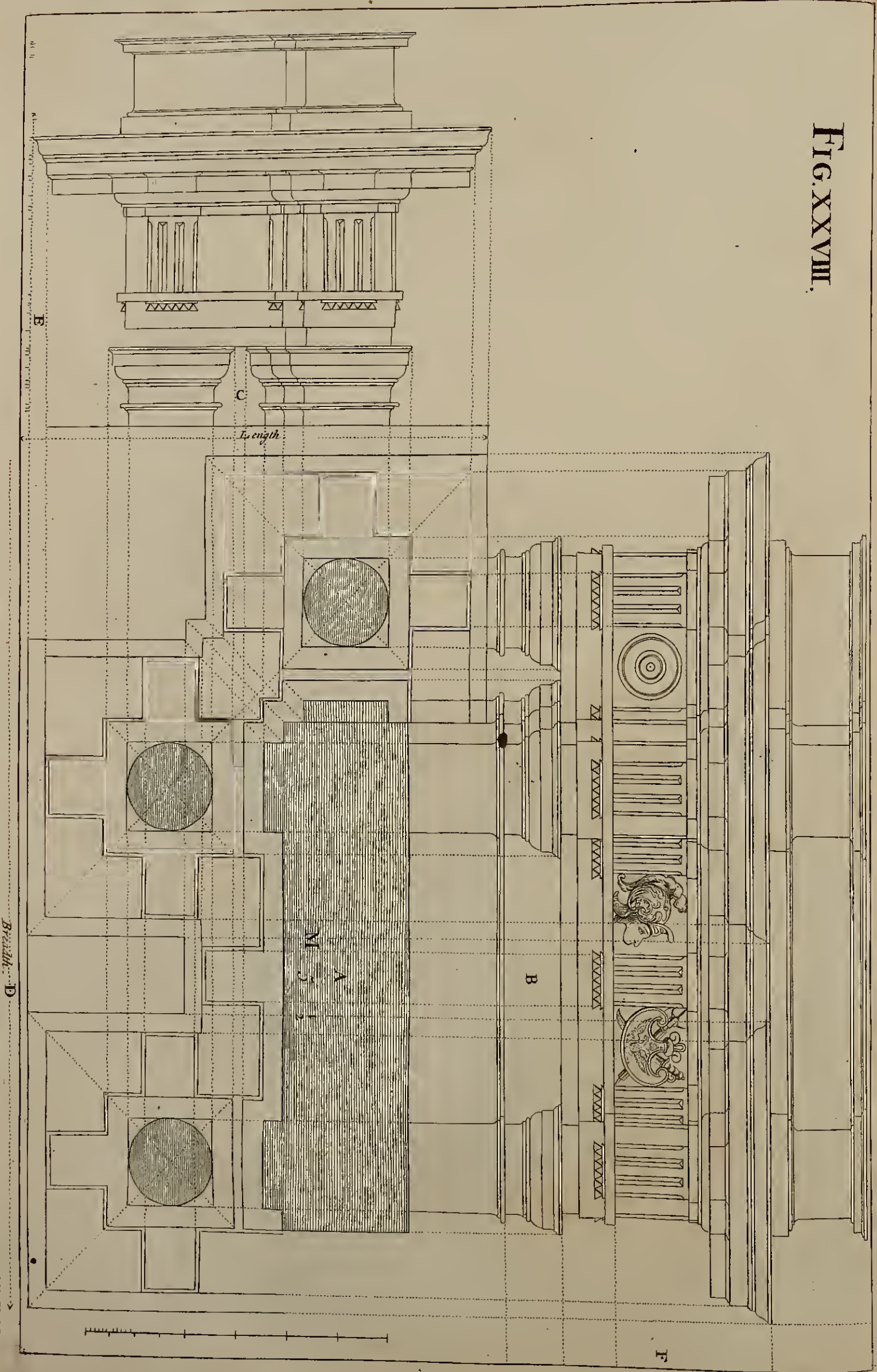
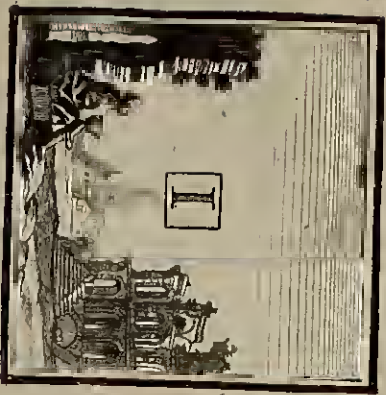


Figura Vigesima Octava.

Præparatio figuræ sequentis.



N figurâ vigesima Octavâ, quæ continet vestigium & elevationes geometricas figuræ vigesima nonæ, oportuit latus **C** delineare seorsum à facie **B**; quia facies exhibit latitudinem ædificii, latus verò exhibit longitudinem; atque una non est alteri æqualis. In vestigio geometrico solidus paries est **A**: circuli referunt summum scapum columnarum. Cætera dant projecturas coronicis, cum suis mutulis.

Twenty-eighth Figure,

Preparatory to the following Figure.



N this Twenty-eighth Figure, which contains the Plan and Geometrical Elevations of the Twenty-ninth Figure, it was requisite to delineate the Side **C** separately from the Front **B**; because the Front, which signifies the Breadth of the Building, and the Side, which shews its Length, are not equal one to the other. In the Geometrical Plan the solid Wall is **A**: the Circles express the Nakeds of the Pillars Shafts at top. The rest is the Projecture of the Cornice, with its Mutules.

Figura Vigesimaona.

Optica projectio ædificii Dorici.



ABES in hac figura vigesimaona, opticam delineationem vestigi, & unius ex elevationibus figure vigesimaoctave; nimirum, elevationis longitudinis; ex quibus eruitur imago nitida ædificii Ordinis Dorici, cum summitatibus & capitellis trium columnarum; ejusque epistylum, Zophorus, & corona.

BO est linea horizontalis; AC est linea plani; in quam, ex lineis D & C figure vigesimaoctave, transferuntur puncta longitudinis duarum elevationum; prolongando versus C ipsam lineam plani, ut oportet. Operaberis autem, ut diximus figurâ vigesimatertia; nimirum, in puncto V desinet latitudo vestigi, incipiet longitudo; & ex punctis latitudinis lineæ tendent ad punctum oculi; ex punctis longitudinis lineæ occultæ tendent ad punctum distantie. Ubi verò hæ lineæ secant visuales VO, fient parallele ad lineam AC, cum ceteris que necessaria sunt ad complendam delineationem opticam vestigi.

Elevatio C figure vigesimaoctave optice contrahetur more consueto, translatis in lineam AB divisionibus lineæ E vel F, ex quibus fient visuales ad punctum oculi; ac demissis ex lineâ visuali AO perpendicularibus ad lineam AC, ita ut lineæ parallele ad lineam plani AC continentur cum aliis lineis parallelis ad lineam AB.

Hic quoque locum habet observatio illa, cujus meminimus figura vigesima sexta, de lineis quæ deorsum excurrunt, & hinc inde terminant membra elevationis optice. Ex iis autem desumuntur projecturæ omnes coronicis & capitellorum.

Twenty-ninth Figure.

A Projection of the Dorick Order in Perspective.



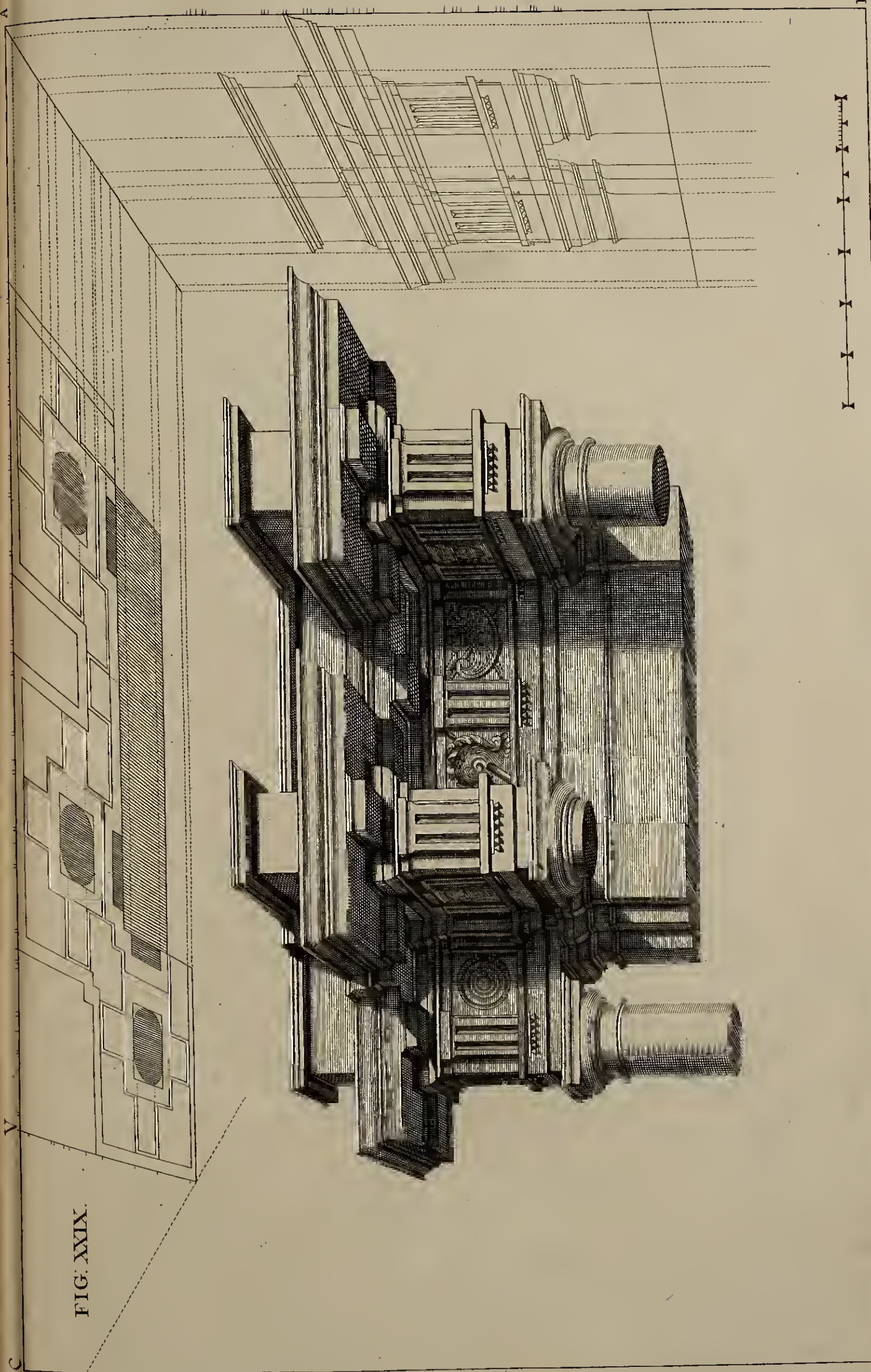
IN this Twenty-ninth Figure, you have in Perspective the Plan, and one of the Uprights of the Twenty-eighth Figure; namely, that of the Length; from whence is drawn this finish'd Piece of the Dorick Order, which has the upper Part and Caps of three Pillars, with their Architrave, Freeze, and Cornice.

BO is the Horizontal-line; AC that of the Plan; into which, from the Lines D and C of the Twenty-eighth Figure, are transfer'd the Points of Breadth and Length of the two Elevations; first prolonging the Line itself, as much as is needful, through C. The Work is then perform'd, as was shewn in the Twenty-third Figure; namely, the Divisions of the Breadth of the Plan end in the Point V, at which those of Length begin. From the first Lines are drawn to the Point of Sight; and from the latter, occult Lines are directed to the Point of Distance: And where these cut the Visual VO, Lines are drawn parallel to AC; with those that are farther necessary for completing the Plan in Perspective.

The Elevation C of the Twenty-eighth Figure is put in Perspective, as usual, by transferring the Divisions of the Line E, or F, into that of AB in this Plate; from whence drawing Visuals to the Point of Sight, they are intersected by Perpendiculars let fall from those Divisions of AO made by the Parallels to the Ground-line AC, and again continu'd parallel to the Perpendicular AB.

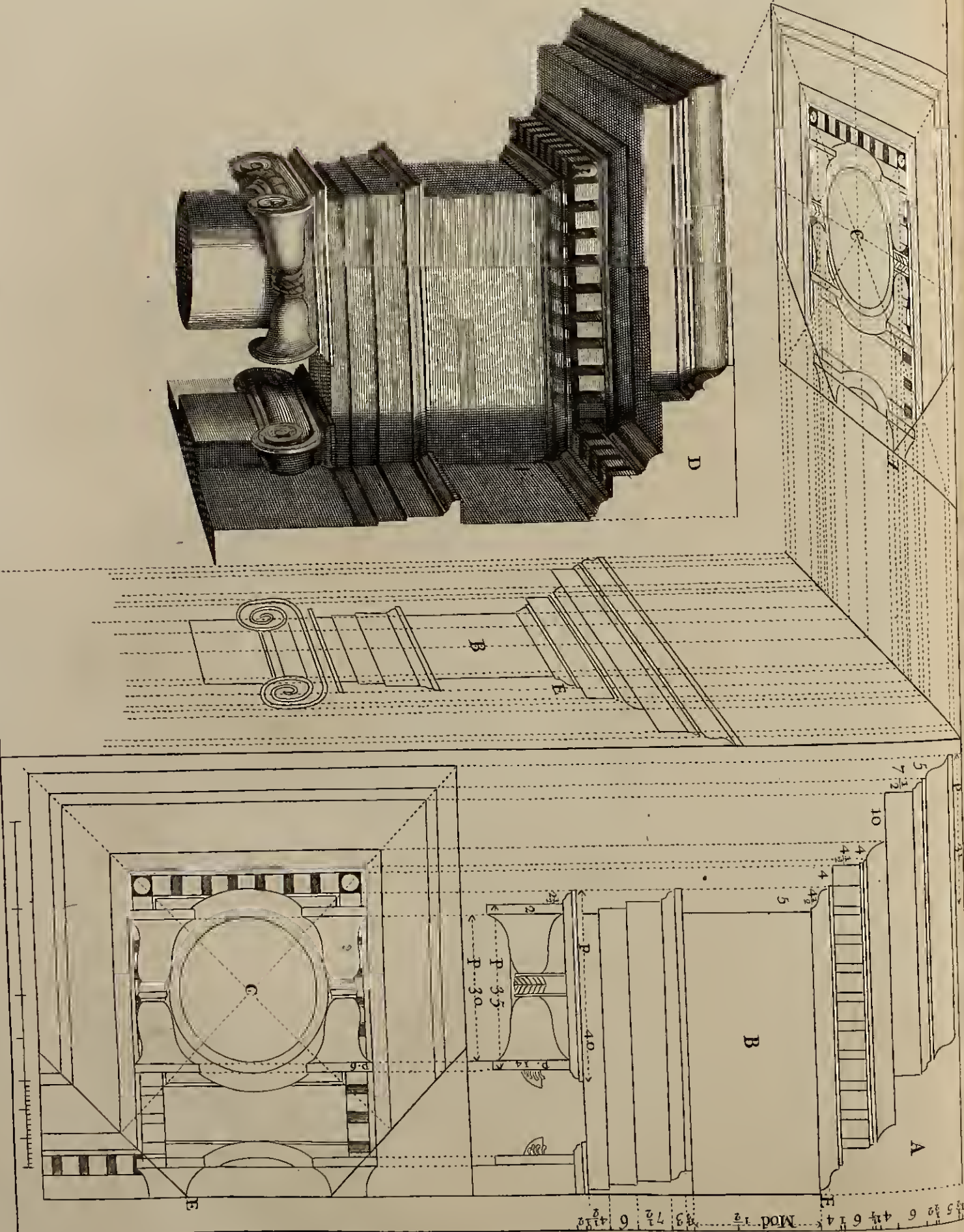
The Observation, mention'd in the Twenty-sixth Figure, is also pertinent in this place; That the Lines, which, in the Perspective-Elevation, tend downward, give the Advance and Recess of the several Members of the Work; and from them are taken all the Projectures of the Entablature and Capitals.

FIG. XXIX.



No.	Name	Rank	Regiment	Remarks
1	John Smith	Private	1st Regt. Inf.	Present
2	James Brown	Private	2nd Regt. Inf.	Present
3	William Jones	Private	3rd Regt. Inf.	Present
4	Thomas White	Private	4th Regt. Inf.	Present
5	Robert Black	Private	5th Regt. Inf.	Present
6	George Green	Private	6th Regt. Inf.	Present
7	Richard King	Private	7th Regt. Inf.	Present
8	Henry Lee	Private	8th Regt. Inf.	Present
9	John Adams	Private	9th Regt. Inf.	Present
10	Benjamin Franklin	Private	10th Regt. Inf.	Present

FIG. XXX.



43 7 2 6 4 1 2
Mod. 12

FIGURA Trigesima.

Optica projectio aedificii Ionici ; ubi de modo iungendi fictum cum vero.



I tibi Pictor quum sis, occasione apparatus quadraginta horarum, vel sepulcri Domini, mutare ad tempus libeat formam architecturae alicuius Ecclesiae iungendo fictum cum vero, ut mihi saepius contigit Mediolani ac Romae, cum ingenti spectatorum delatione & admiratione ; paucis ostendam tibi modum quem servare debeas in operando.

Sectio coronicae vera, quae, ut suppono, videri debet continua esse cum cornice picta in telario, est A ; elevatio geometrica coronicae, & reliquorum quae delineanda sunt, est B ; vestigium geometricum est C. Porro, tum vestigium tum elevatio longitudinis optice contrahentur more consueto, ut vides in C & B : ex hisque formabitur in telario coronicae nitida cum columna & anta ; ipsumque telarium depictum, normaliter coagmentandum erit verae coronicae.

Ut fiat ea pars longitudinis, quae coronicam pictam continuare videatur cum vera, & erui non potest ex elevatione deformata ; oportet sectionem A transferre in D, ducendo visuales ex punctis terminativis membrorum sectionis D, usque dum occurrant lineis latitudinis eorundem membrorum. Quod si colores in telarium scite inducantur, angulus in E, quamvis mere depictus, videbitur verus ; & ex adverso, anguli quos telarium ipsum depictum facit cum diversis adeo crepidinibus coronicae verae, nusquam apparebunt, praeterquam in quadra sine duntaxat ; & unio architecturae verae cum ficta dignosci non poterit.

The Thirtieth Figure.

An Ionick Work in Perspective ; with the Manner of reconciling the fictitious to the solid Architecture.



F, being a Painter, you were requir'd, against the Solemnity of the Holy-Week, to alter for a while the Architecture of some Altar-piece, by joining Painting to the real Work ; as I have often done, both at Rome and Milan, to the great Satisfaction and Surprize of the Beholders : I shall briefly shew the Method to be observ'd in performing the same.

The Division of the solid Cornice, which I here suppose shall appear continu'd in that painted on the Canvass, is A ; the Geometrical Elevation of the Cornice, and other Parts to be drawn, is B ; the Geometrical Plan is C. The Plan and Elevation of the Length are put in Perspective after the usual manner, in C and B ; from those the finish'd Cornice, with the Pillar and Pilaster, are delineated on the Canvass ; and the Picture is then conjoin'd, at right Angles, to the true Cornice.

For adjusting the Members so, that the painted Cornice may seem to be the real one continu'd, (which can't be done by the Perspective Upright) you must transfer the Section A to D ; and from the terminating Points of the several Members thereof, draw visual Lines, till they meet those of their respective Members in the Perspective. And if the Colours are laid by a skilful Hand, the Angle at E, tho' painted only, will appear as real ; and on the contrary, the Angles which the Members of the painted Cornice make with the different Projectures of those of the true, will never be discern'd, unless in the very uppermost Fillet ; but the Conjunction of the real with the painted Architecture, will be altogether imperceptible.

Figura Trigesima prima.

Optica projectio coronicis Corinthiæ, cum capitello & summitate columnæ.



N hoc schemate linea plani est CIE, horizontis est DFO; punctum oculi est O, distantia est D. Elevatio geometrica capitelli Corinthii cum sua perpendiculari A, quorum divisiones cernuntur in perpendiculari CD. Vestigium geometricum B habet longitudinem equalem latitudini: optice autem contrahitur methodo consueta. Nimirum, translatis divisionibus latitudinis & longitudinis in lineam plani CIE; ex punctis latitudinis sunt visuales ad punctum oculi; ex punctis latitudinis sunt occultæ ad punctum distantie: hoc modo habes quicquid necessarium est ad contractionem opticam vestigii. Nam linee longitudinum sunt partes visualium, ut patet in GN, HL: linee latitudinum, parallele ad lineam plani sunt ex punctis in quibus lineæ tendentes ad punctum distantie secant visuales HO, ut vides in NL. Porro, si tantundem prolongaretur horizontalis DO, ita ut haberet duo puncta distantie remota equaliter ab O, medietas diagonalium, quæ sunt in quadrato majori GNLH optice deformato, & in quadratis ejus minoribus, tendent ad unum punctum distantie; altera medietas ad aliud punctum distantie.

Elevatio longitudinis optice contrahitur ductis parallelis ad CE, quæ ubi pervenerint ad visuales IO, continentur cum aliis parallelis ad IK. Præterea, translatis in lineam IK divisionibus lineæ perpendicularis CD, ex punctis divisionum sunt visuales ad punctum oculi, ac ducuntur singula membra ipsius elevationis, cujus latitudines sunt partes visualium, altitudines verò sunt partes linearum parallelarum ad IK. Denim ex vestigio & ex elevatione longitudo, formatur coronicæ nitida cum capitello. Ut autem facilius delineentur mutuli, primum fient quadratâ formâ, ut in M; deinde congruus flexus in singulos inducitur.

The Thirty-first Figure.

The Optick Projection of a Corinthian Cornice, with the Capital and PART of the Column.



*I*n this Figure the Line of the Plan is CIE, that of the Horizon is DFO; the Point of Sight is O, the Point of Distance D; the Geometrical Elevation of the Corinthian Capital, with its Engraving, is A; whose Divisions are seen in the Perpendicular CD. The Length and Breadth of the Geometrical Plan B are equal, and the Plan is put into Perspective after the usual Method; to wit, by transferring the Divisions of Breadth and Length into the Line CIE; from the Points of Breadth drawing Visuals to the Point of Sight; and from those of Length occult Lines to the Point of Distance: by which Intersections you have all that's necessary for putting the Plan into Perspective. For the Lines of Length are Parts of visual Rays, as is manifest by GN, HL; and the Lines of Breadth are made Parallels to the Ground-line, from the Intersections before-mention'd, as is seen in NL. Moreover, if the Horizontal-line DO were so prolong'd, as to receive another Point of Distance equidistant from O; half the diagonal Lines of the great Square GNLH, and of the lesser Squares contain'd therein, would tend to one Point of Distance, and the other half to the other.

The Elevation of the Length is put in Perspective, by continuing the Parallels to CE, till they cut the Visual IO; and from thence dropping Lines parallel to IK: Then transferring into IK the Divisions of the Perpendicular CD, from them make visual Lines to the Point of Sight, and draw the several Members of the Upright; whose Breadths are Parts of Visuals, and their Heights Parts of Perpendiculars, or Lines parallel to IK. Lastly, from the Plan and Elevation of the Length, you delineate the finish'd Cornice and Capital: But that you may more easily draw the Moldings, first make them in a Square Form, as in M; and that will very much assist you to give the Scroll of each a more agreeable Turn.

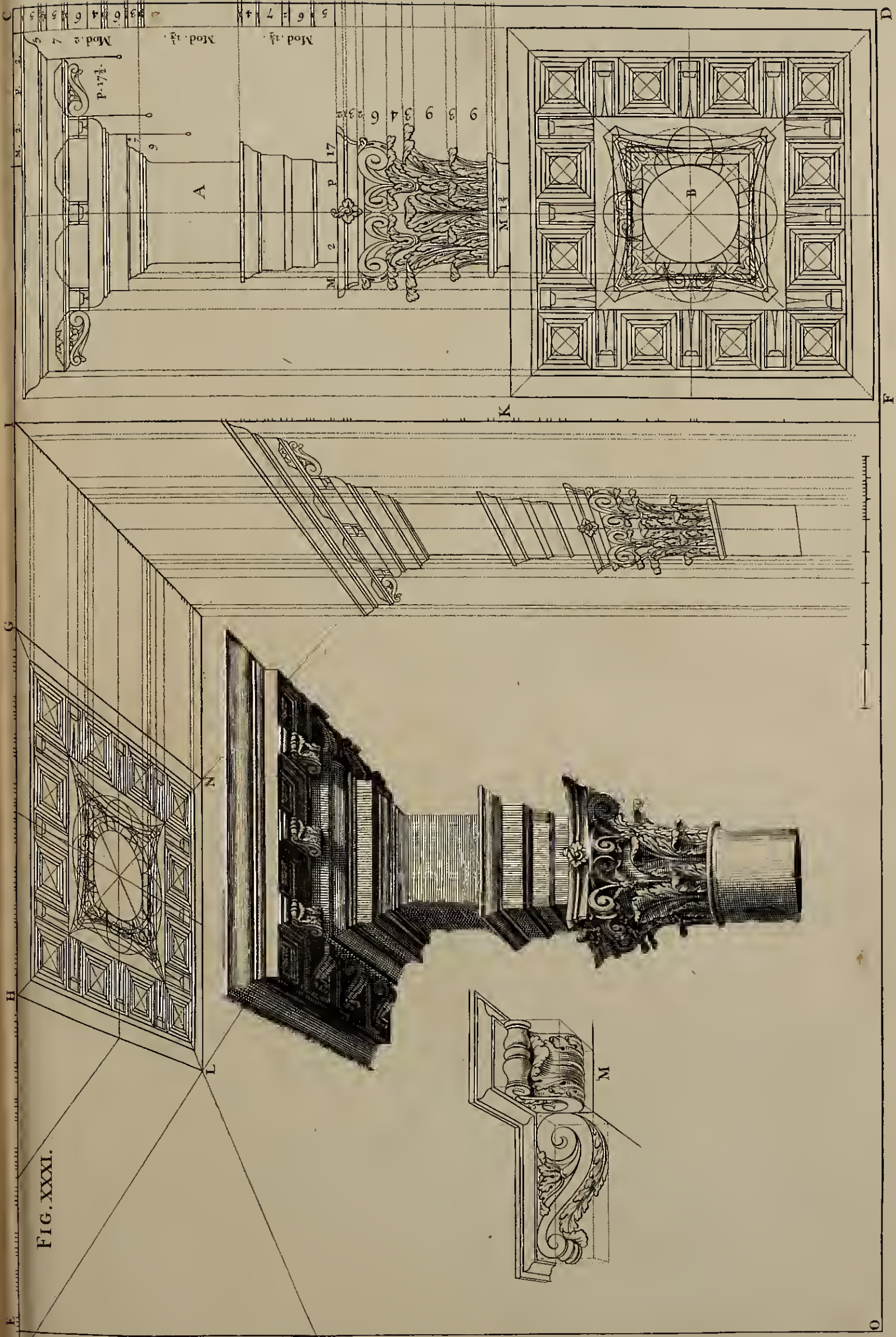


FIG. XXXI.



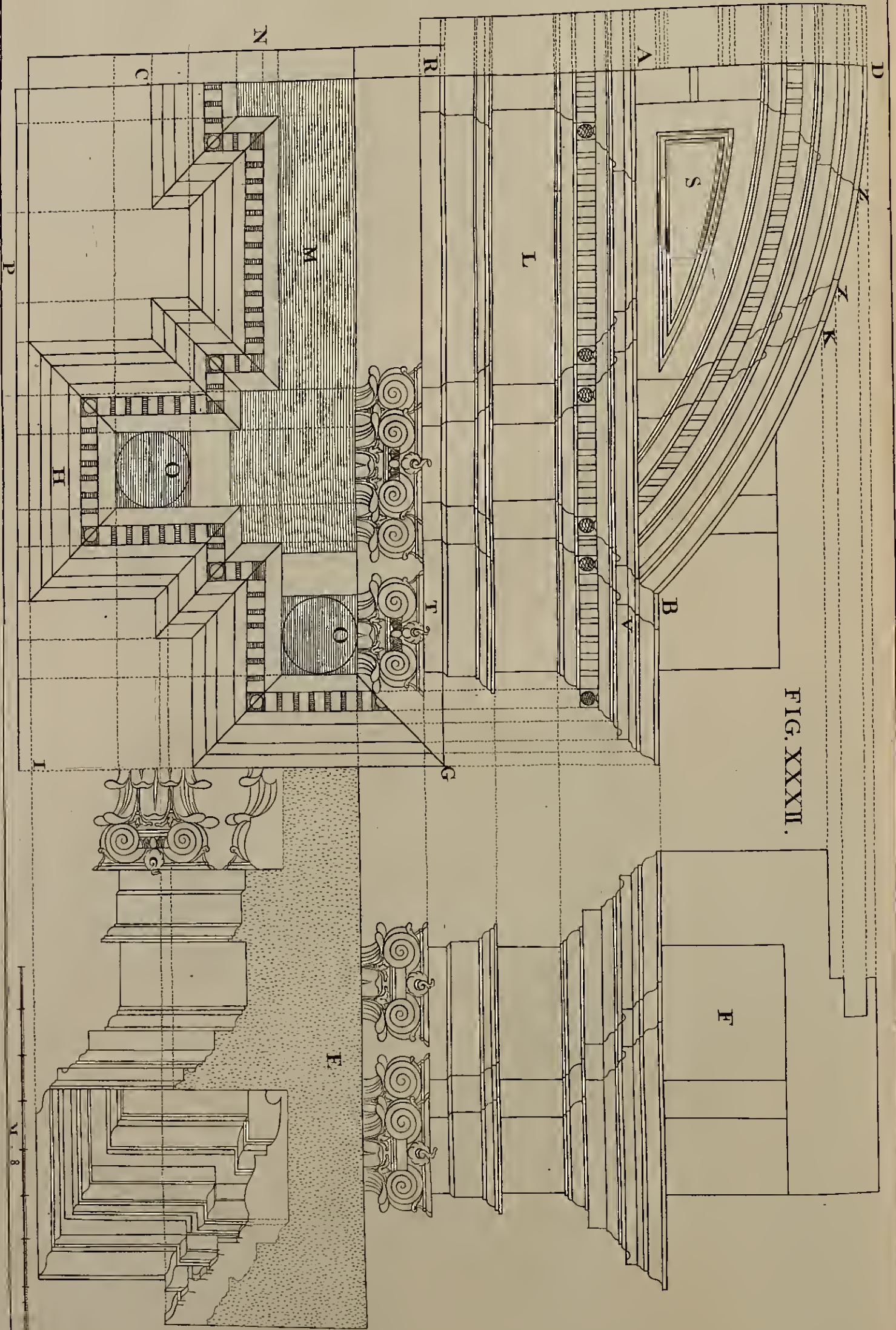


Figura Trigesima Secunda.

Delineatio geometrica coronicis,
Ordinis Compositi.



T hoc schema grandius ac distinctius esset, ejus medietatem dimittaxat suscepit delineandam. P N est vestigium geometricum. M est solidus paries. O O spatia columnarum. In H sunt crepidines coronicis. Elevatione geometrica latitudinis edificii constat epistylio T, zophoro L, et coronâ V, supra quam eminent fastigium S.

Jam ut inveniatur centrum arcuum, distantia A V fiat equalis distantia A C. Postquam una cuspidè circini in C, alia extendatur usque ad V: ita sent arcus, quorum ultimus est B D, omnesque sunt concentrici. Elevatione F ostendit longitudinem edificii ex parte G I; elevatio E ostendit longitudinem ipsius ex parte D R.

Thirty-second Figure.

The Geometrical Design of a Cornice, of the Composite Order.



HAT this Figure might be larger and more distinct, I have here describ'd only the Half of it. P N is the Geometrical Plan. M is the solid Wall. O O are the Places of the Columns. H shews the Projections of the Cornice. The Geometrical Elevation of the Breadth of the Frontispiece, consists of the Architrave T, the Frieze L, and the Cornice V, over which is rais'd the Pedament S.

For finding the Center of the arch'd Lines of the Pedament, make the Distance A C equal to that of A V; and placing one Point of the Compasses in C, extend the other to V, and describe the Arch. The other Arches, of which B D is the utmost, have all the same Center. The Elevation F shews the Length of the Work on the Side G I. The Upright E. shews the Length of the same on the Front D R.

Figura Trigesimalertia.

Deformatio coronicis Compositæ.



FIGURA hæc trigesimalertia minus ardua tibi videbitur, si ex ea delineandam primùm suscipias medietatem que respondet vestigio PN & elevationi BR figure trigesimalertiae; rejecto in ultimum fastigio, postquam cetera compleveris. Linea BV est horizontalis. Punctum oculi est V, punctum distantie remotum est ab V spatio BV, additis modulis quatuordecim cum dimidio. Linea plani est AR, in quam ex Q versus A transfertur longitudo N, cum omnibus earum divisionibus; ut ex punctis latitudinis fiant visuales ad punctum oculi; & ex punctis longitudinis fiant visuales ad punctum distantie. Ex his habebis quicquid necessarium est ad projectionem opticam vestigii, ut ostendimus figurâ trigesimalertia primâ. Eademque methodo, quam ibi servavimus, contrabes elevationem P longitudinis coronicis: ac tum ex illa, tum ex vestigio, eruetur cornicis nitida more consueto.

Ut delineetur fastigium, transferende sunt in lineam AB divisiones ipsius ex elevatione F figure trigesimalertiae, ac ducende visuales ad punctum oculi, additis lineis terminativis uniuscujusque membri, que accipientur ex vestigio Q optice deformato. Centrum O arcuum fastigii nitidi, remotum est à summate coronicis, medietate distantie, quam habent ungues quadree cui fastigium ipsum incumbit. Ac prout, si accipias ex elevatione P diversas altitudines membrorum fastigii; latitudines verò accipias ex vestigio Q; opus tuum feliciter absolves.

The Thirty-third Figure.

A Composite Cornice in Perspective.



HIS Thirty-third Figure will be found the less difficult, if you first attempt that Half which answers to PN in the Plan, and BR in the Upright of the Thirty-second Figure; leaving the Pedament, till all the rest be finish'd. The Line BV is the Horizontal. V is the Point of Sight; the Point of Distance is fourteen Modules and a half without the Point B, more than the Interval BV. The Line of the Plan is AR, in which from Q you have the Divisions of Breadth of the foregoing Plan P; and from Q to R those of the Length thereof N: From the former, Visuals are drawn to the Point of Sight; and from the latter, occult Lines to the Point of Distance. And from these you have all that's necessary for putting the Plan in Perspective; as was shewn in the Thirty-first Figure. By the Method there observ'd, you may also describe the Perspective-Elevation of the Length P; and from this, and the Plan, delineate the finish'd Cornice after the usual Manner.

For making the Pedament, the Divisions of the Elevation F in the Thirty-second Figure, must be transfer'd into the Line AB, and Visuals drawn from them to the Point of Sight; giving to each Member its proper Out-line and Contour, as may be taken from the Perspective-Plan Q. The Center O of the Arches in the finish'd Pedament, is plac'd below the upper Member of the Cornice, as much as half the Extent of the upper Fillet from whence the Pedament springs. And by taking the several Heights of the Members thereof, from the Elevation P; and the Breadths from the Plan Q; you will successfully finish and complete your Work.

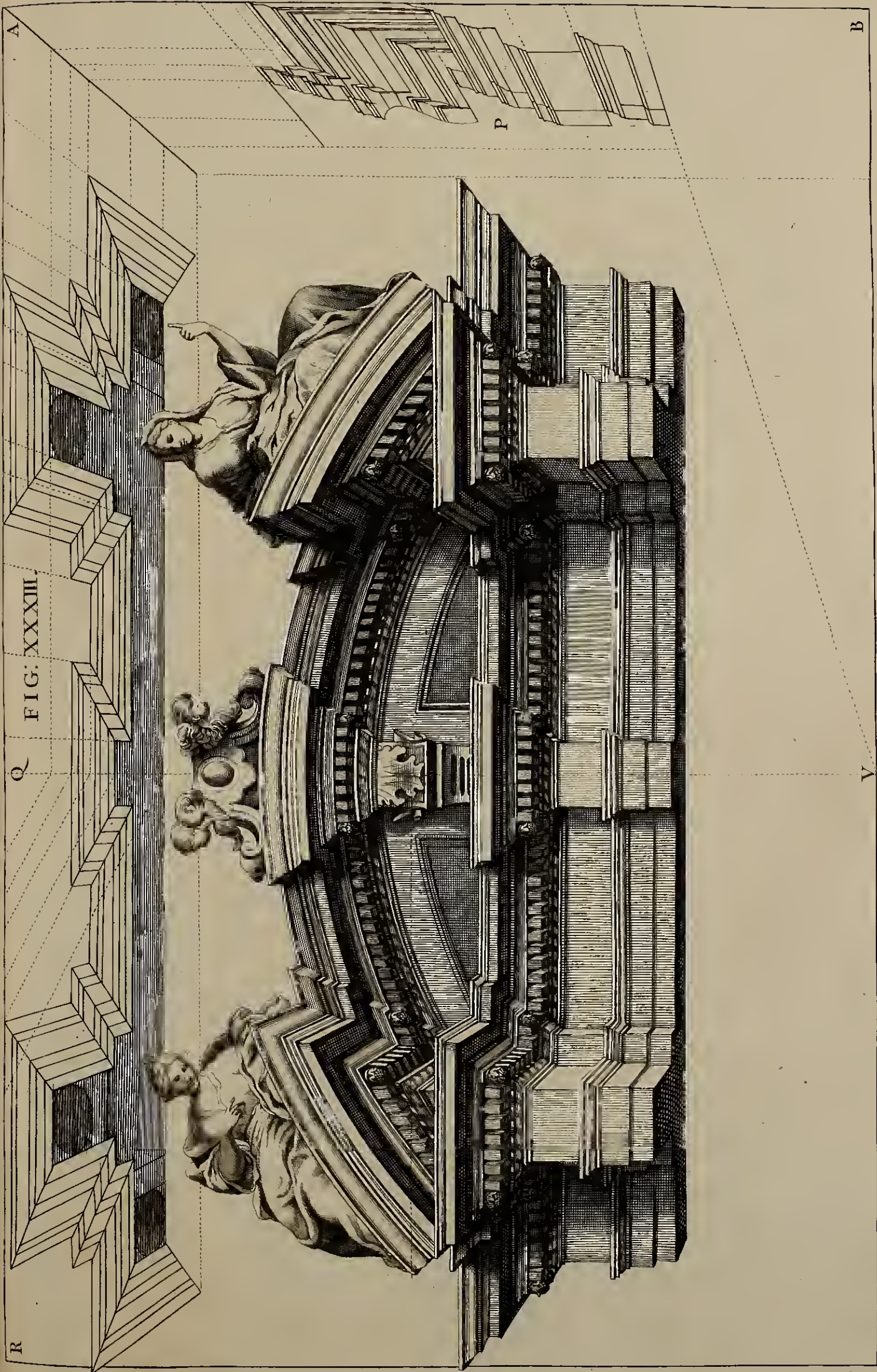


FIG: XXXIII

A

B

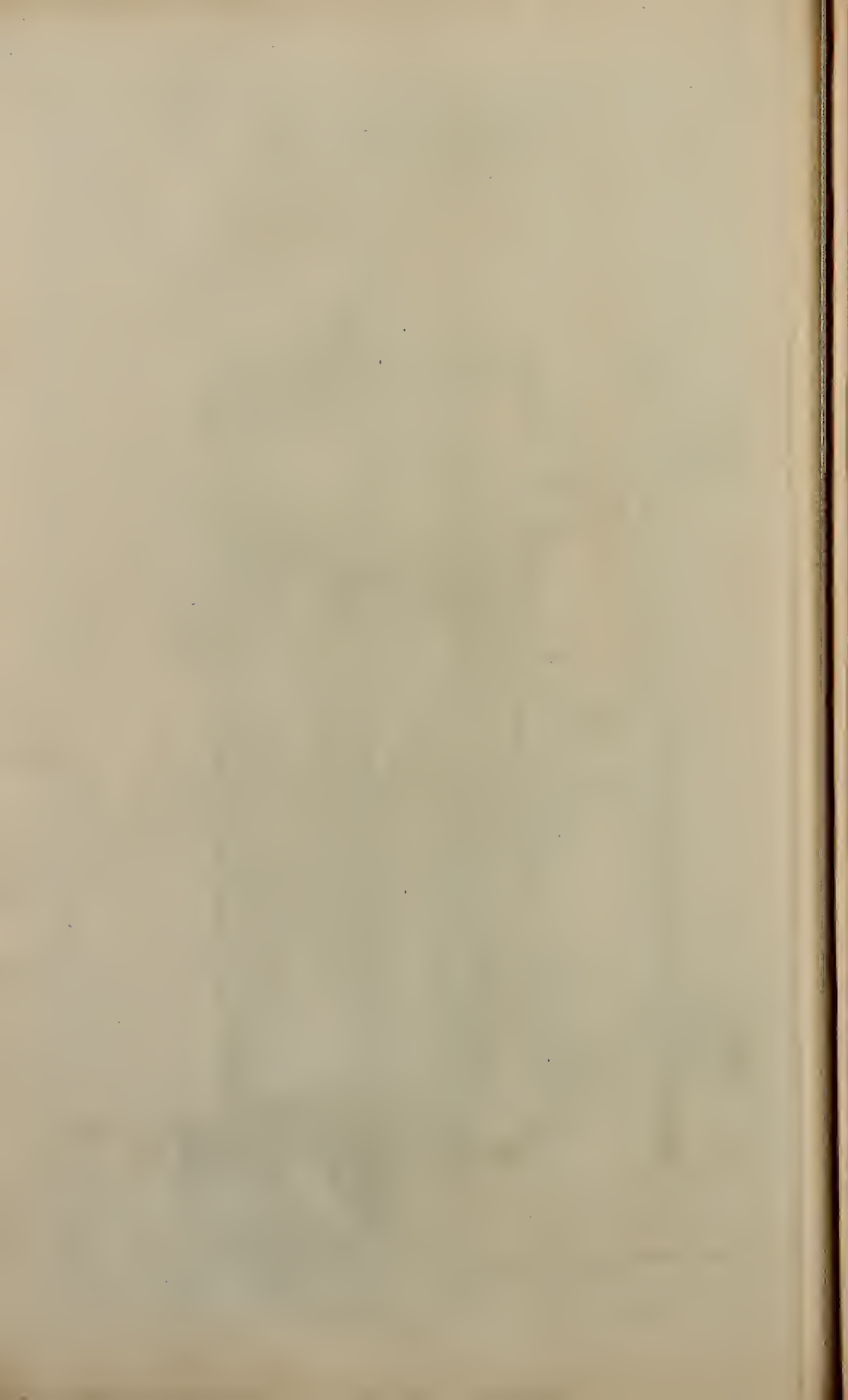
P

Q

V

O

R



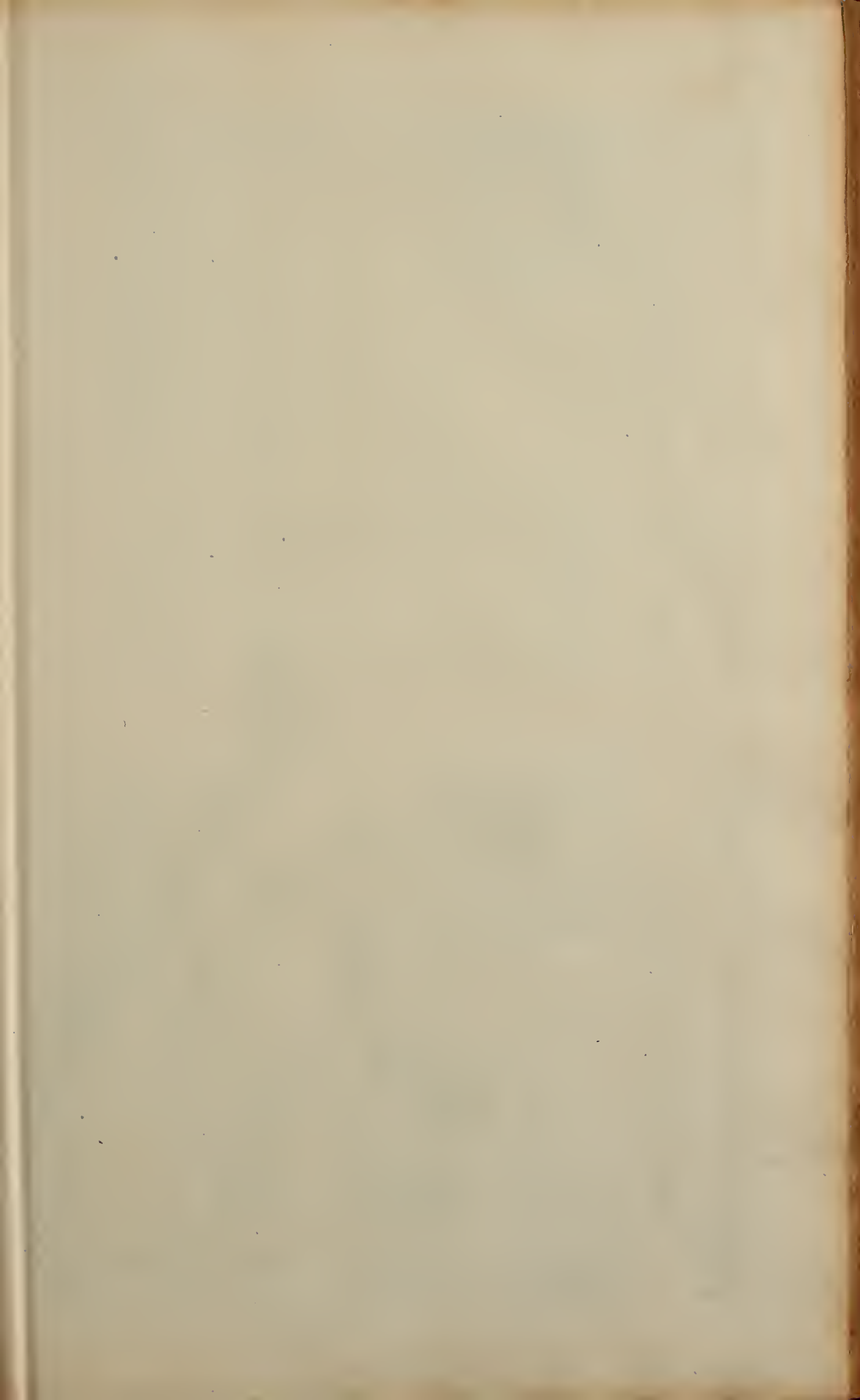
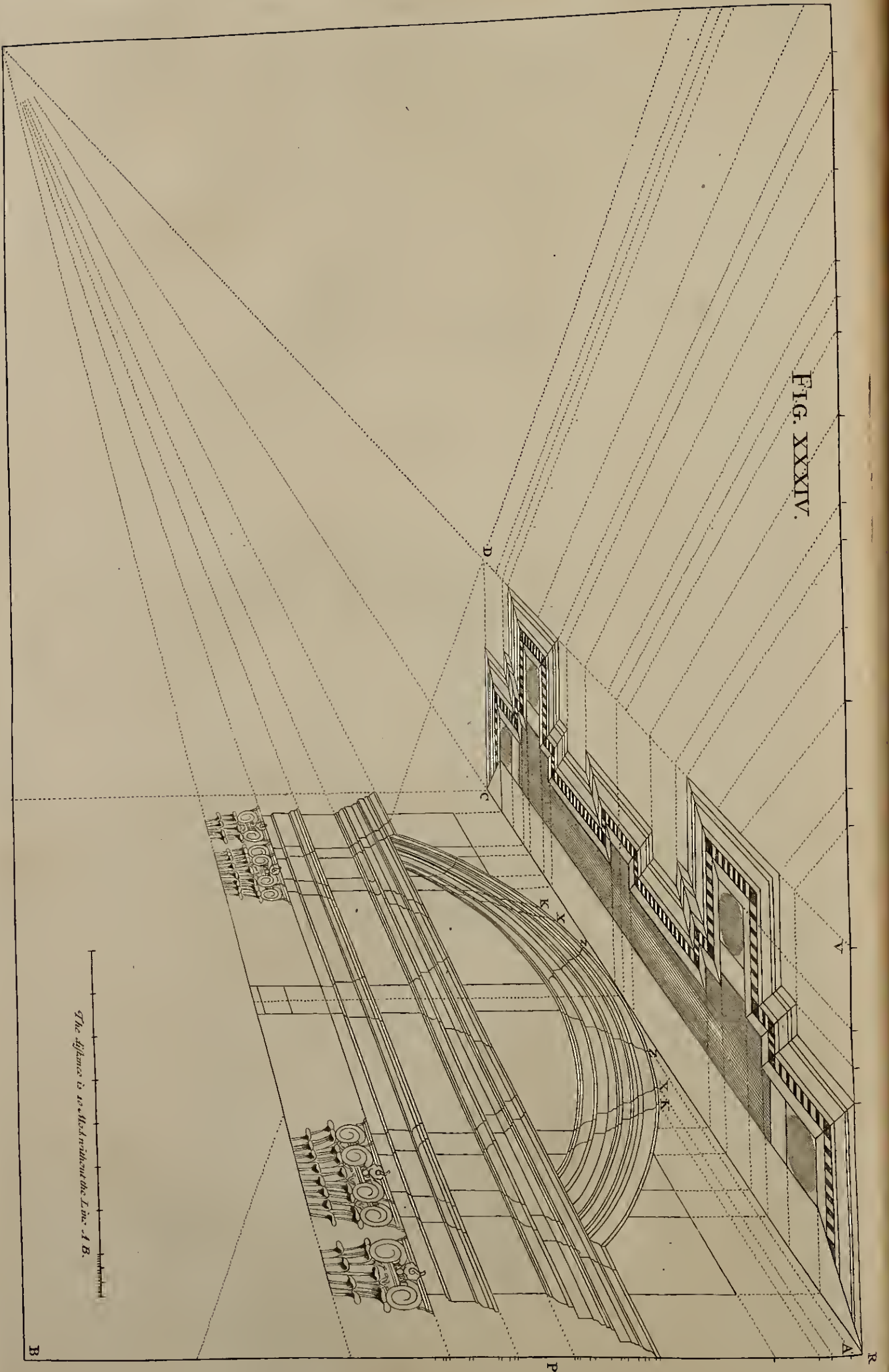


FIG. XXXIV.



The distance is 10 feet without the Lion of B.

B

P

A

R

Figura Trigesimaquarta.

Præparatio ad figuram trigesimalquintam.



¶ Placuerit conferre figuram trigesimalquartam cum præfenti figura trigesimalquarta, dignosces vestigium & elevationem cornicis Compofitæ alio modo hic deformari, mutando foli- licet longitudinem in latitudinem, & latitudinem in longi- tudinem. Propterea hæc figura tantum spatii occupat, ut eam seorsum à cornice nitida delineare oportuerit.

Divisiones latitudinis in vestigio incipiunt ex V ver- sus R, & sunt eadem cum divisionibus rectæ I G figuræ trigesimalsecundæ. Divisiones longitudinis incipiunt ex V versus S, & sunt eadem cum divisionibus rectæ I P duplicatis. Ex divisionibus latitudinis sunt visuales ad punctum oculi; ex divisionibus longitudinis sunt rectæ ad punctum di- stentia; cum reliquis quæ necessaria sunt ad complectendam vestigiæ AVDC.

Elevatio longitudinis cornicis & fastigii, optice contrahitur per lineas parallelas ad line- am plani AS; quæ ubi peremerint ad visuales AC, continentur cum aliis parallelis ad perpendicularium P, ut diximus figurâ trigesimalprimâ. In idem perpendicularium P transferuntur ex figurâ trigesimalsecundâ divisiones rectæ DR; & insuper altitudines, quas puncta KXZ habent supra rectam VA; sentique visuales ad punctum oculi: sectiones autem visuales cum parallelis ad perpendicularium P, dabunt sex puncta sive fastigii, respondentia punctis KXZ duplicatis, figuræ trigesimalsecundæ; eorumque ductu formandus est supremus arcus. E- odem artificio fient reliqui omnes.

Facilius delineabitur cornix, cujus maximam partem occupant lineæ visuales ad punctum oculi: porro, membra omnia, exceptâ sive, communia sunt coronæ & fastigio. Adeoque pun- ctâ similla in lineis terminatis membrorum singulorum, ex quibus assumuntur crepidines & ungues figuræ nitidæ, sunt parallela ad perpendicularium P.

The Thirty-fourth Figure,

Preparatory to the Thirty-fifth.



If you please to compare the Thirty-third Figure with this Thirty-fourth Figure, you will perceive the Plan and Elevation of this *Compofite* Cornice to be deline- ated differently from that; to wit, by making the Length of that the Breadth of this, and the Breadth of that the Length of this: On which account, this Figure takes up so much Room, that there was a ne- cessity of drawing the finish'd Cornice on a separate Paper.

The Divisions of Breadth in the Plan begin from V toward R; and are the same with those of the Line I G in the Thirty-second Figure. The Divisions of Length are set from V toward S; and are the same with those of the Line I P in the Thirty-second Figure; which being the Half, is here doubl'd. From the Divisions of Breadth, Lines are drawn to the Point of Sight; and from those of the Length, Lines to the Point of Distance; with the farther Requisites for completing the Plan AVDC in Perspective.

The Upright of the Length of the Cornice and Pedament, is made by producing Parallels to the Ground-line AS; till they intersect the Visual AC; and thence continuing Lines parallel to the Perpendicular P, as was directed in the Thirty-first Figure. Into the same Perpendicular P are transferr'd the Divisions of the Line DR in the Thirty-second Figure; and also the Heights which the Points KXZ have above VA in the same Figure. From all which, Visuals are drawn to the Point of Sight; which being intersected by the Perpendiculars, give six Points on the *Cima* of the Pedament, which answer to the said Points KXZ of the Thirty-second Figure, doubl'd: By these the outward Arch is form'd. And by the same Rule, you find Points for all the others.

You will more easily draw the Cornice, the greatest Part of it consisting of visual Lines to the Point of Sight: Moreover, all the Members, except the upper *Cima*, are common both to the Cornice of the Entablature, and to the Pedament; so that the corresponding Points, in the Out-lines of their several Members, from whence the Breaks and Contours of the finish'd Piece are taken, are found in the same Parallels to the Perpendicular P.

Figura Trigesimaquinta.

Deformatio coronicis Compositæ,
ad latus inspectæ.

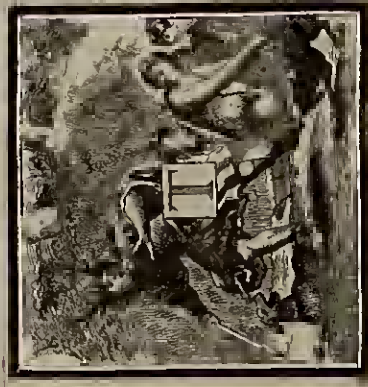


RTIFICIUM nitidæ coronicis, ex vestigio & elevatione figure trigesimequarte eruendæ, non difert ab eo quod sæpè traditum est. Itaque supposito, quòd linea plani & horizontis, ac puncta oculi ac distantie, habeant in hoc schemate situm omnino eundem, quem habent in præcedenti; operuorum circinorum, inveniuntur distantie, quas anguli necessarii ad integram deminationem coronicis, habent à linea normali ad ipsam lineam plani. Nam ducendo lineas visuales, aliasque lineas parallelas ad ipsum perpendicularum, cum terminis & flexibus qui conveniunt singulis membris, complebitur delineatio.

In fastigio visuales sunt penitus occultæ: puncta autem similia H & L, ex quibus fastigium incipit introsum flecti, incidunt in unam eandemque visulem. Id ipsum dico de aliis punctis similibus. Nam lineæ rectæ omnes, quæ in figura trigesimatertia sunt parallele ad lineam plani, in figuris trigesimaquarta & trigesimaquinta sunt partes linearum visualium.

The Thirty-fifth Figure.

A Side-View of the Composite Cornice,
in Perspective.



THE Manner of drawing this finish'd Cornice, from the preceding Plan and Elevation, is the same with that so often shewn you. Admitting therefore, that the Lines of the Plan and Horizon, and the Points of Sight and Distance, have the very same Position in this, that they had in the preceding Scheme; all the Angles necessary for delineating the entire Cornice, are readily found by the help of two pair of Compasses; taking their Distances one way from the Ground-line; and the other way from a Line perpendicular to the same: Then drawing the visual and perpendicular Lines, and keeping the Place and Contour of the several Mouldings, you complete your Design.

In the Pedament the visual Lines are wholly occult; and the Points H and L, where the Pedament begins to break back, being of like Height, are found in one and the same Visual: And the same may be said of all Points that are of equal Height from the Plan; for all the right Lines, which in the Thirty-third Figure are Parallels to the Ground-line, in the Thirty-fourth and Thirty-fifth Figures, are Parts of the visual Lines.

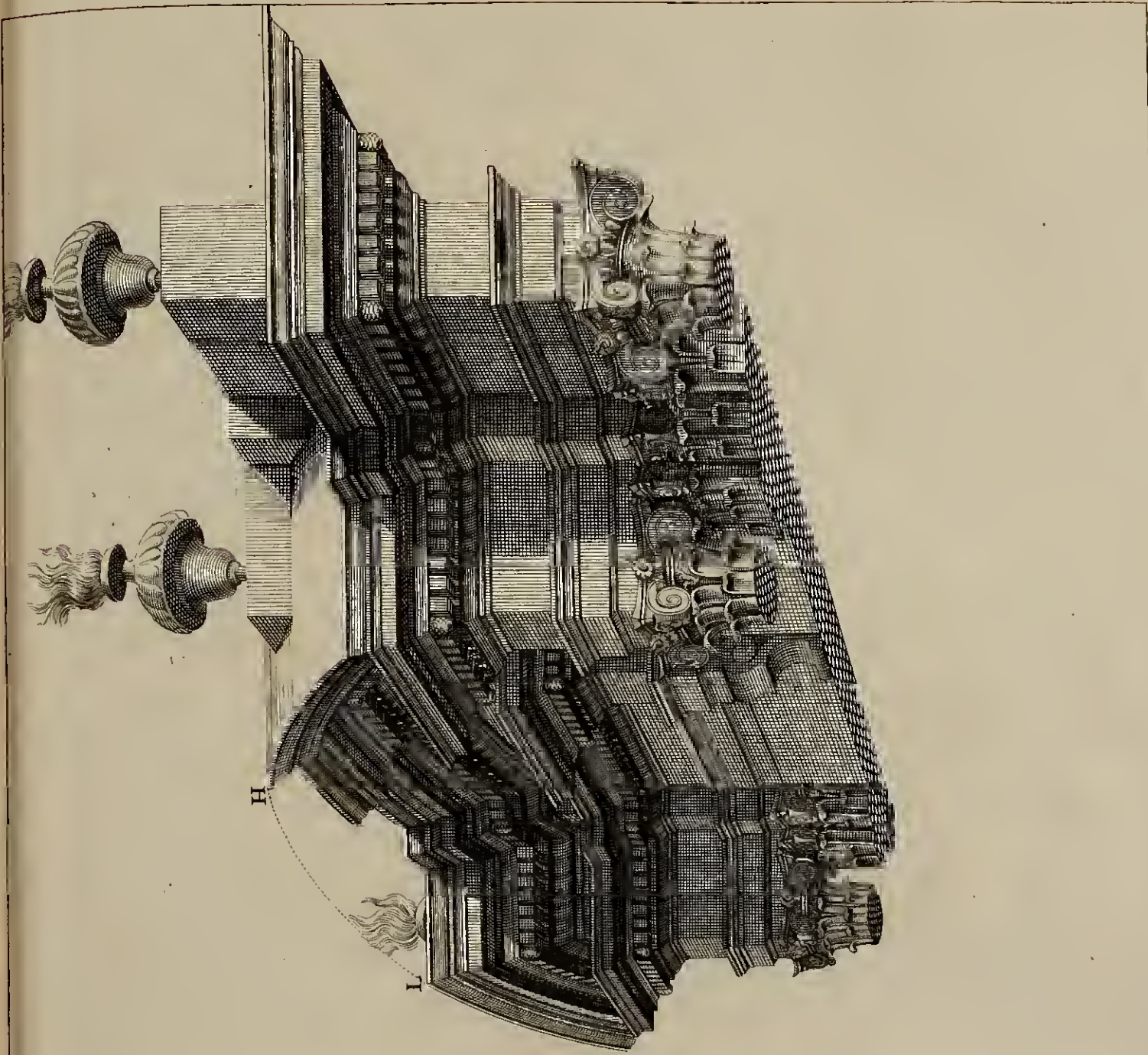


FIG. XXXV.

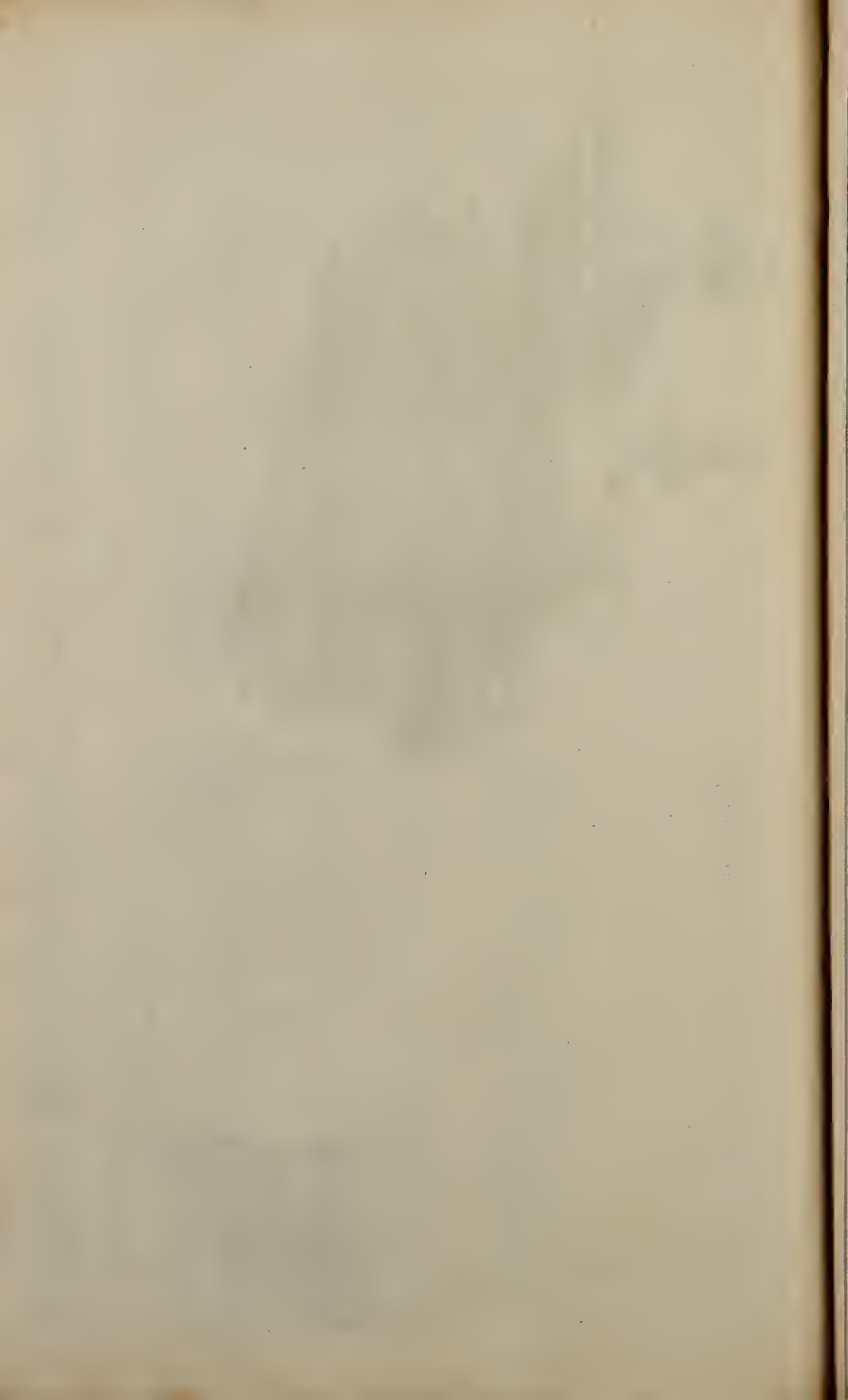
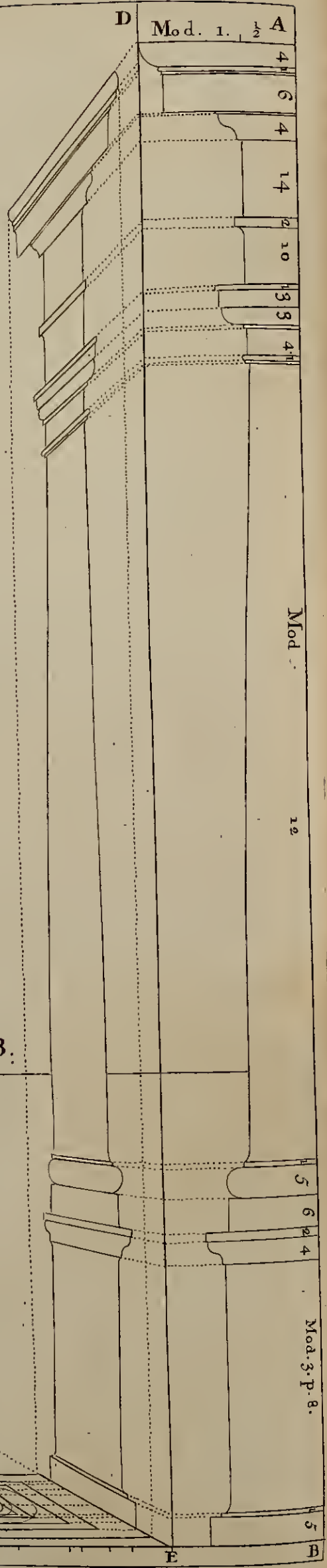
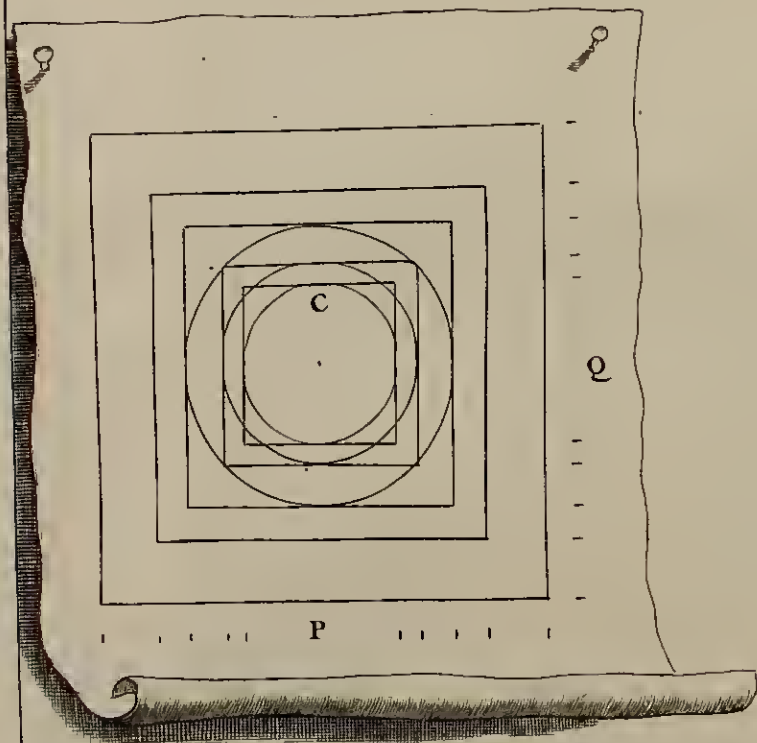




FIG. XXXVI.



The point of distance lies 14 Modules without the line AB.

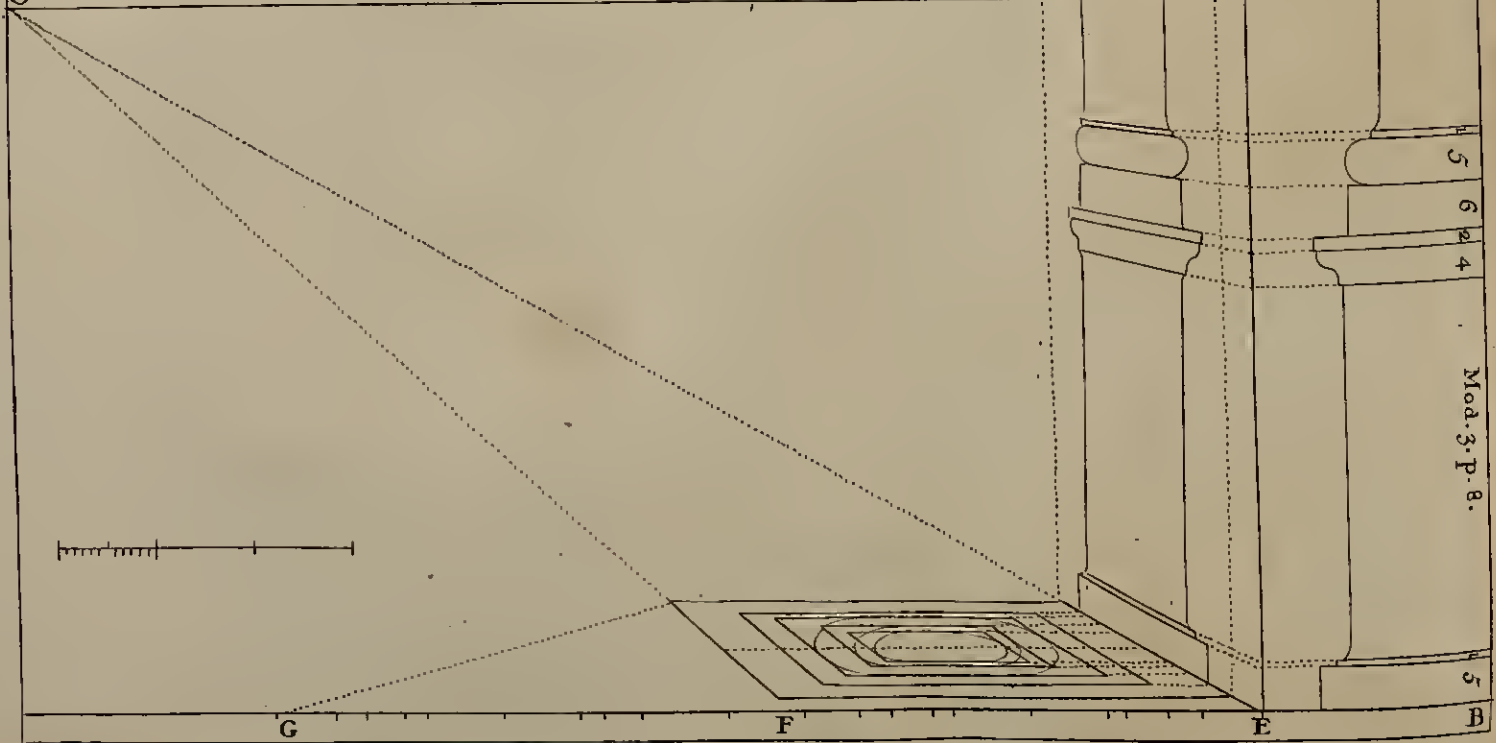


FIGURA Trigesimasexta.

Præparatio ad figuram trigesimamseptimam.



N vestigio geometrico C, & in ejus elevatione AB, præcipuas tantum lineas, adnotavi, ne figuram confunderem, & ut studiosorum industriae aliquid relinquerem. Linea plani EG habet divisiones latitudinis P, & longitudinis Q, vestigii geometrici C. Ex punctis latitudinis ducentur more solito visuales ad O punctum oculi; ex punctis longitudinis fiunt occultæ ad punctum distantia, quod extra lineam AB protenditur modulis quatuordecim: & ubi occultæ ex divisionibus longitudinis secant visualem FO fiunt parallele ad lineam plani EF, adhibitis sectionibus talium parallelarum cum visualibus, ad

complendam deformationem vestigii.

Eadem lineæ quæ in vestigio deformato sunt parallele ad EF, prolongantur usque ad visualem EO, & continuantur cum aliis parallelis ad perpendicularum DE. Fiunt quoque visuales ad punctum oculi ex divisionibus elevationis AB translatis in perpendicularum DE; adhibitis sectionibus talium parallelarum cum visualibus, ad complendam deformationem longitudinis elevationis.

The Six and thirtieth Figure,

Preparatory to the Thirty-seventh.



N the Geometrical Plan C, and in the Elevation thereof AB, I have only mark'd the principal Lines, as well for avoiding Confusion in the Figure, as that something might be left to the Industry of the Studios. The Line of the Plan EG has the Divisions of Breadth P, and of Length Q, of the Geometrical Plan C. From the Points of Breadth are drawn, as usual, Visuals to the Point of Sight O; From the Points of Length occult Lines are produc'd to the Point of Distance, which lies fourteen Modules without the Line AB: And where the occult Lines

from the Divisions of Length cut the Visual FO, Parallels are made to the Ground-Line EF; and from the Intersections of those Parallels with the Visuals, you complete the Delineation of the Plan in Perspective.

The Lines which in the Plan are parallel to EF, being prolong'd to the Visual EO, are then continu'd parallel to the Perpendicular DE. And from the Divisions of AB, produc'd to DE, visual Lines are drawn to the Point of Sight; which intersecting the Perpendiculars aforesaid, you from thence find the Length of the Elevation in Perspective.

FIGURA Trigesimasseptima.

Deformatio columnæ Etruscæ.



X præparatione quam exhibuimus figurâ trigesimasextâ, eruitur columna hæc nitida Ordinis Etrusci, opticè imminuta per latitudines & altitudines partium singularum; quæ accipiuntur ope duorum circinorum, ut sæpius dictum est.

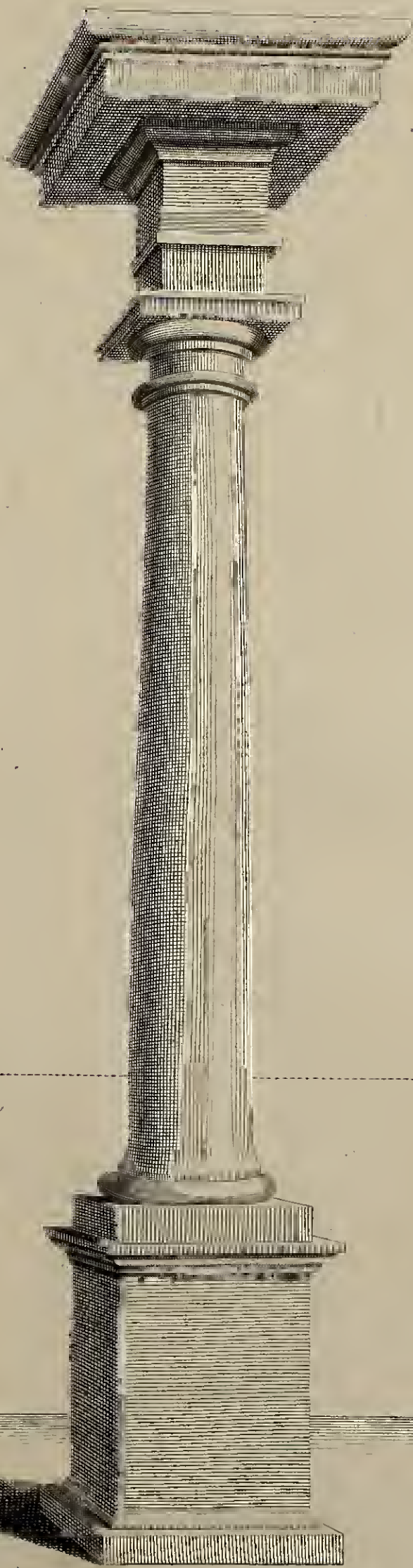
The Thirty-seventh Figure.

A Tuscan Column in Perspective.



FROM the Preparation exhibited in the Thirty-sixth Figure, is drawn this complete Piece of the *Tuscan* Order, brought into Perspective by means of the Breadths and Heights of the several Parts, exactly taken off with the Compasses, as has been often said.

FIG. XXXVII.



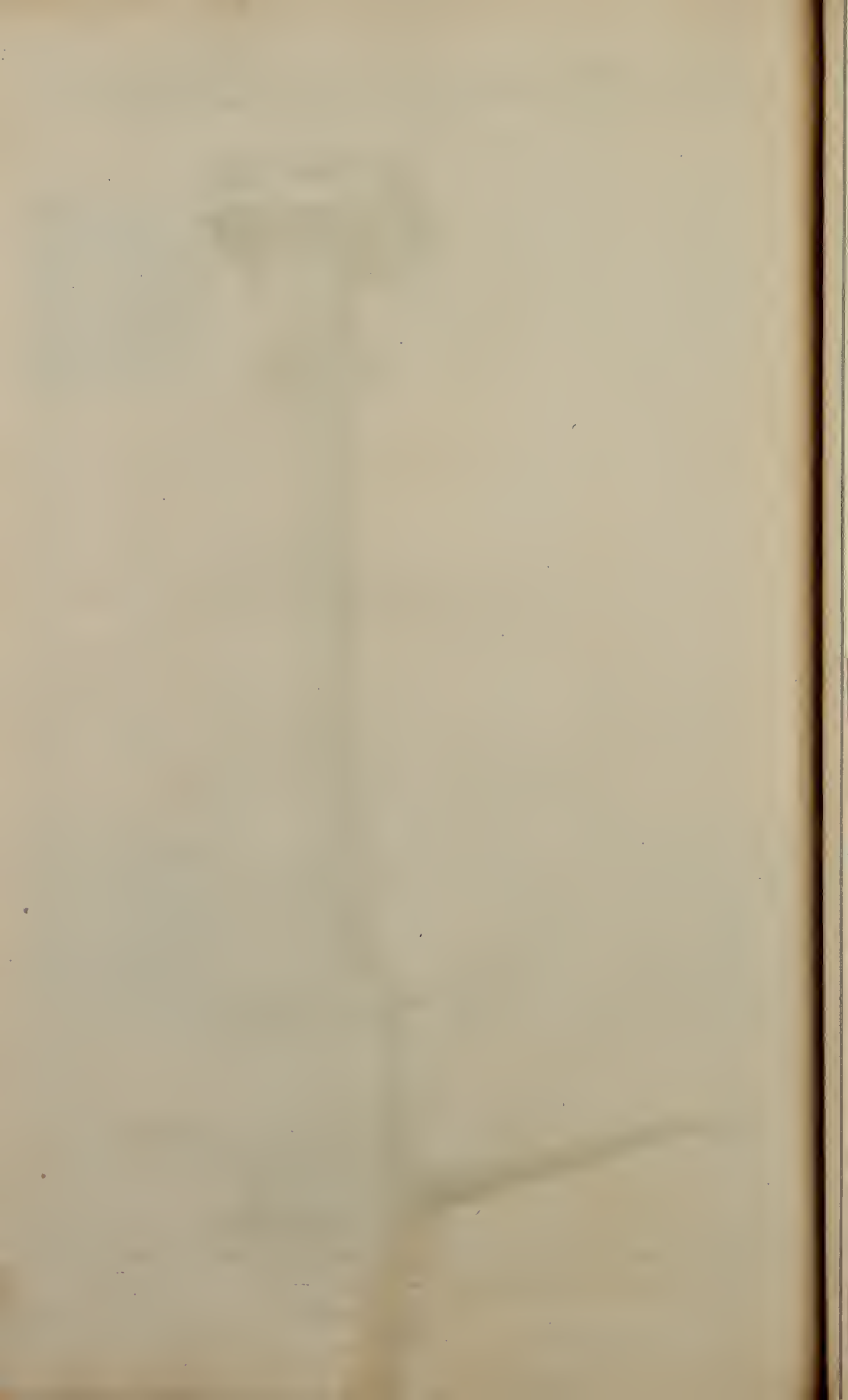
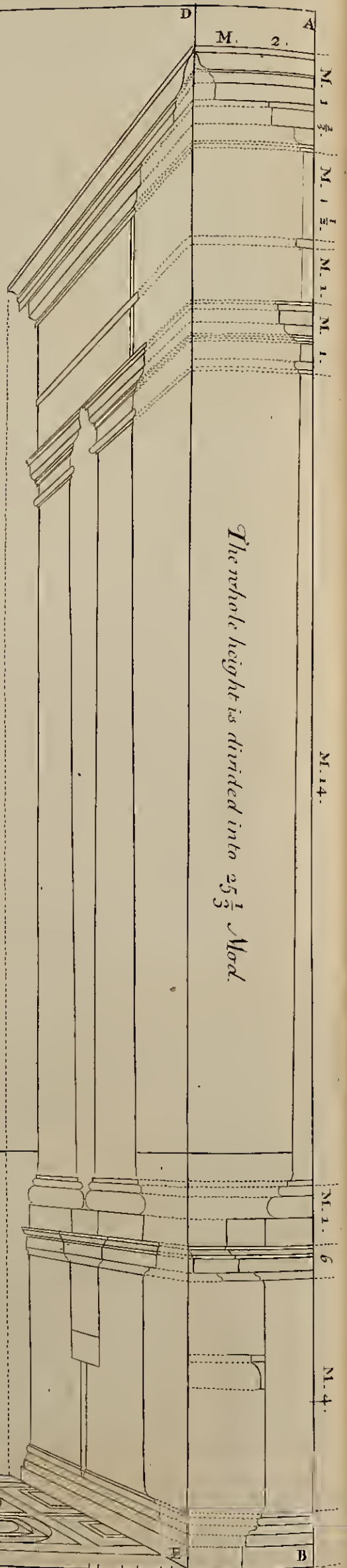
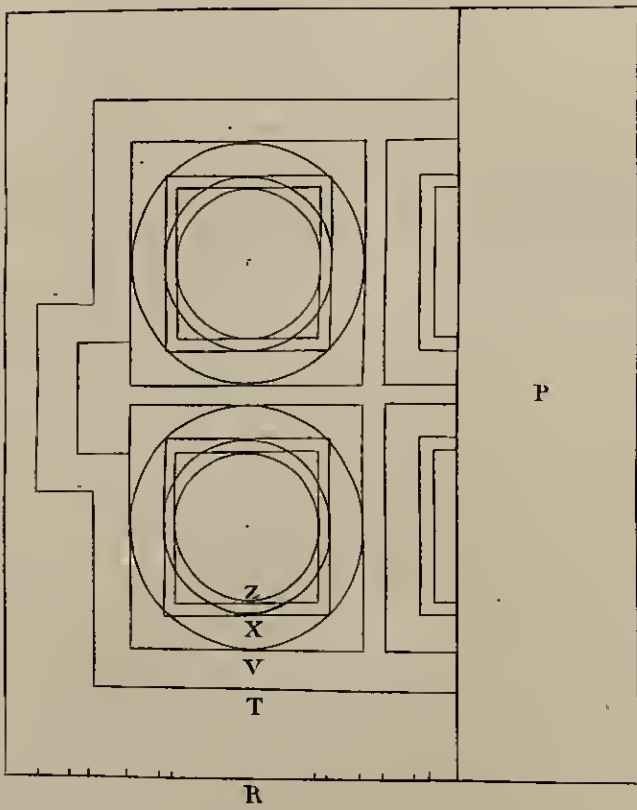


FIG. XXXVIII.



Mod. 3.

The Distance is 15 Mod. without the Line A.B.

FIGURA Trigesimaoctava.

Præparatio ad figuram trigesimamnonam.



ÆC figura est simillima figuræ trigesimæsexte. In vestigio P limes prominentiæ coronicis est R; coronæ verò in stylobatâ est T. soliditas stylobatæ est V. ambitus columnæ in imo est X, in summo Z.

The Thirty-eighth Figure,

Preparatory to the Thirty-ninth.



HIS Figure is very much the same with the Thirty-sixth. In the Plan P, the utmost Projecture of the Cornice is R; that of the Cap of the Pedestal is T; the Trunk of the Pedestal is V; the naked Shaft of the Column at bottom is X, at top is Z.

FIGURA Trigefimanona.

Deformatio ædificii Dorici.



ABES hoc loco ædificium Doricum, addito statuæ unius ornamento. Velim autem, ut si figuram aliquam ex his desumptam, delineandam assumes, aliquid mutes saltem in loco punctorum oculi aut distantia. Hoc modo majores in hac arte progressus facies; & si alicubi calator aberraverit, ex lapsu illius nullum senties detrimentum.

The Nine and thirtieth Figure.

A Piece of Dorick Architecture in Perspective.



IN this Plate you have a *Dorick* Composition, with the additional Ornament of a single Statue; but I would advise, when you undertake to work after any of these Designs, you would at least place the Points of Sight and Distance somewhat differing from those here given; which Practice will both greatly further your Progress in this Art, and prevent any Inconvenience, that may arise from a Mistake of the Engraver.

FIG. XXXIX.



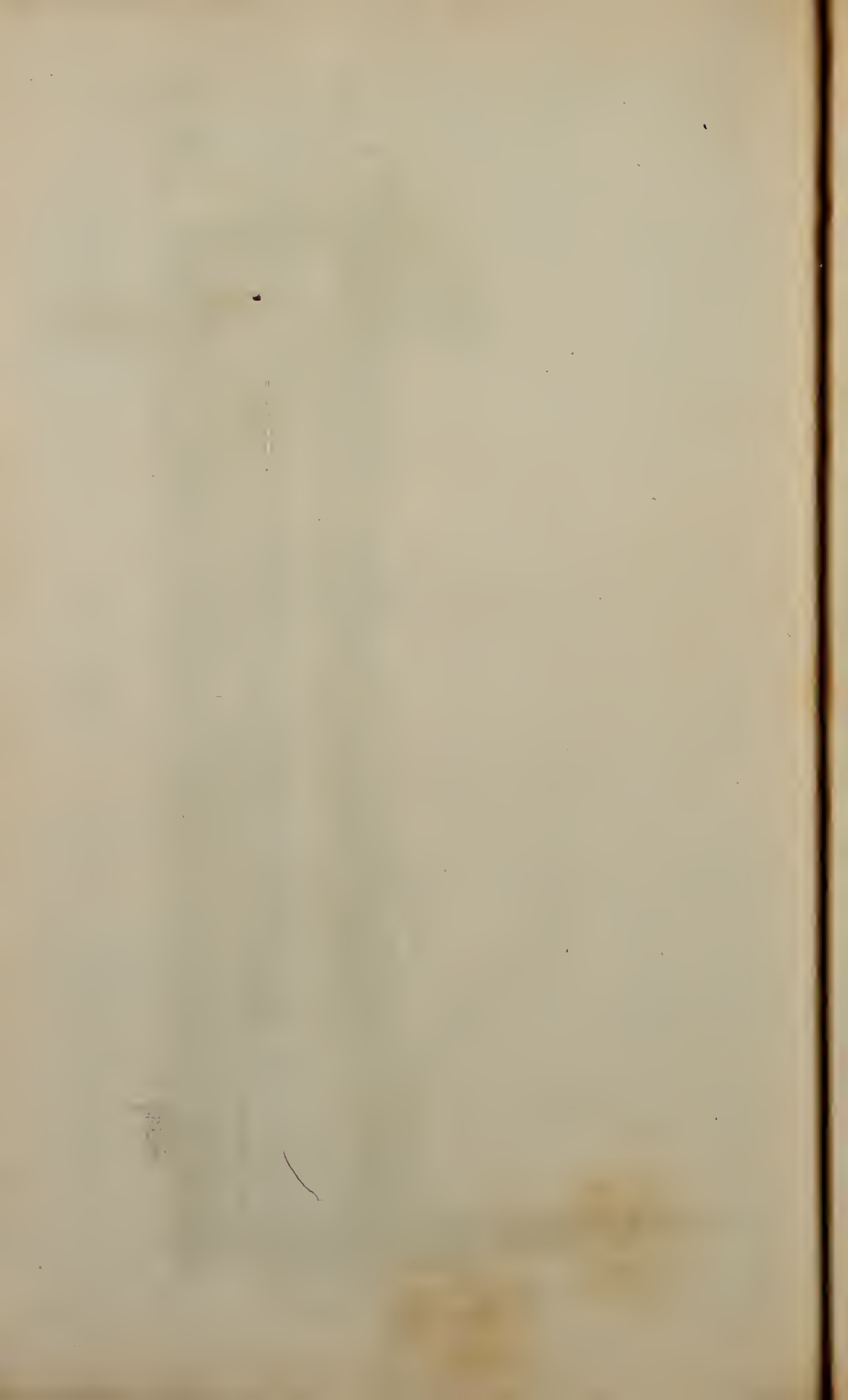


FIG. XL.

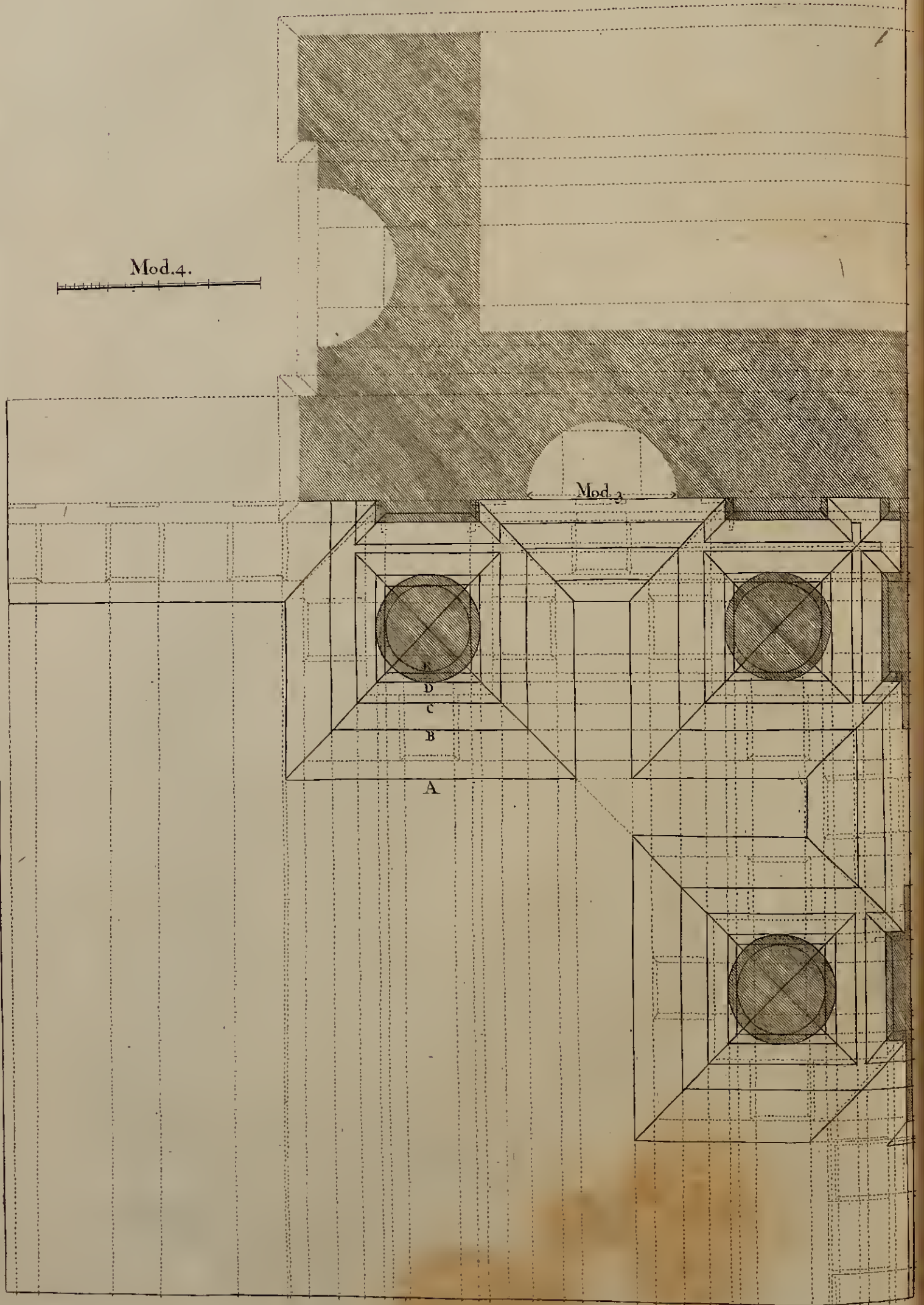


FIGURA QUADRAGESIMA.

Vestigium geometricum ædificii Ordinis
Dorici.



T studiosorum, qui sedulo se exercuerint in pra-
xibus hucusque traditis, & ad majora inbient,
utilitati serviam, delineandam suscepi medie-
tatem arcûs cum tribus columnis, ac totidem
statuarum loculamentis. Ad vitandam autem
confusionem, ea dumtaxat membra in vestigio
adumbrantur, quæ recensuimus figurâ trigesimaoctavâ, & osten-
dunt characteres A, B, C, D, E.

The FORTIETH FIGURE.

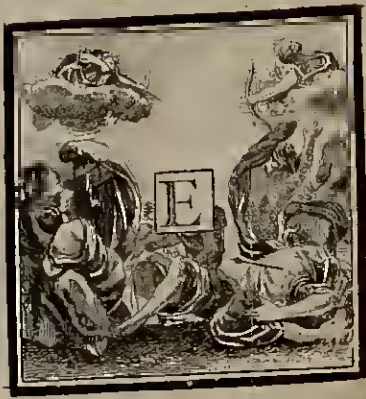
*The Geometrical Plan of a Design, of the
Dorick Order.*



OR the Benefit of the Studious, who, ha-
ving reduc'd to Practice the Rules hither-
to laid down, aim at yet greater Things;
I have here undertaken to delineate half
an Arch adorn'd with three Columns, and
as many Niches for Statues. But to a-
void Confusion, I have given full Lines to those Members
only, which were mention'd in the Thirty-eighth Figure,
and which are here denoted by the Characters A, B, C, D, E.

FIGURA Quadragesimaprima.

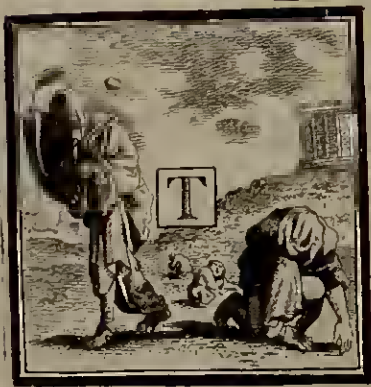
Elevatio geometrica ædificii Dorici.



X vestigio geometrico eruitur hæc elevatio geometrica longitudinis ædificii nostri. Et iccirco figura ista quadragesimaprima, cujus mensuræ omnes desumptæ sunt ex Barozzio, congruit longitudini figuræ quadragesimæ.

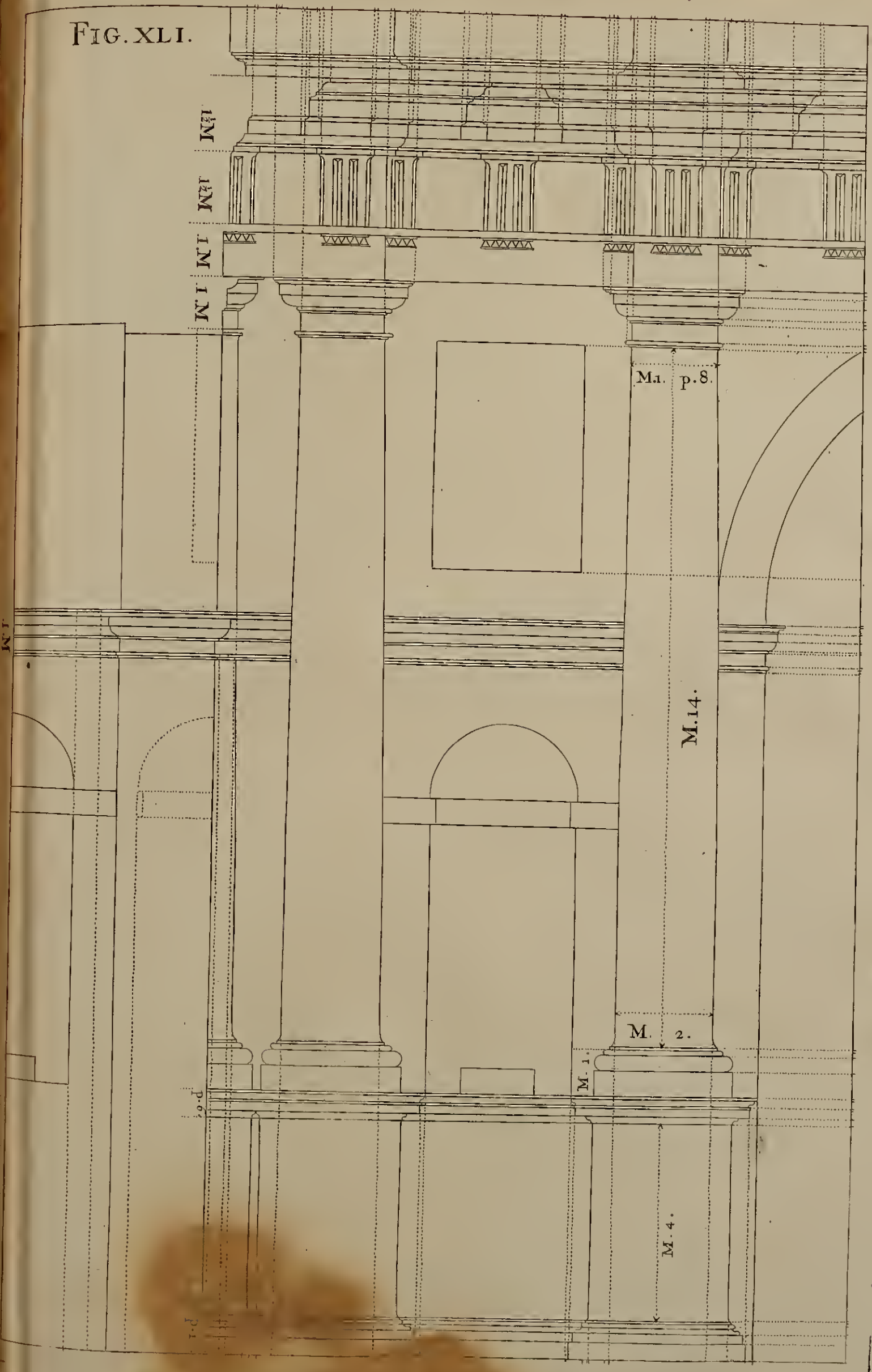
The Forty-first FIGURE.

The Geometrical Elevation of the foregoing Design.



HIS Upright is drawn from the foregoing Geometrical Plan; and therefore all the Parts of this Design, whose Measures are taken from *Vignola*, exactly answer those of the Fortieth Figure.

FIG. XLI.



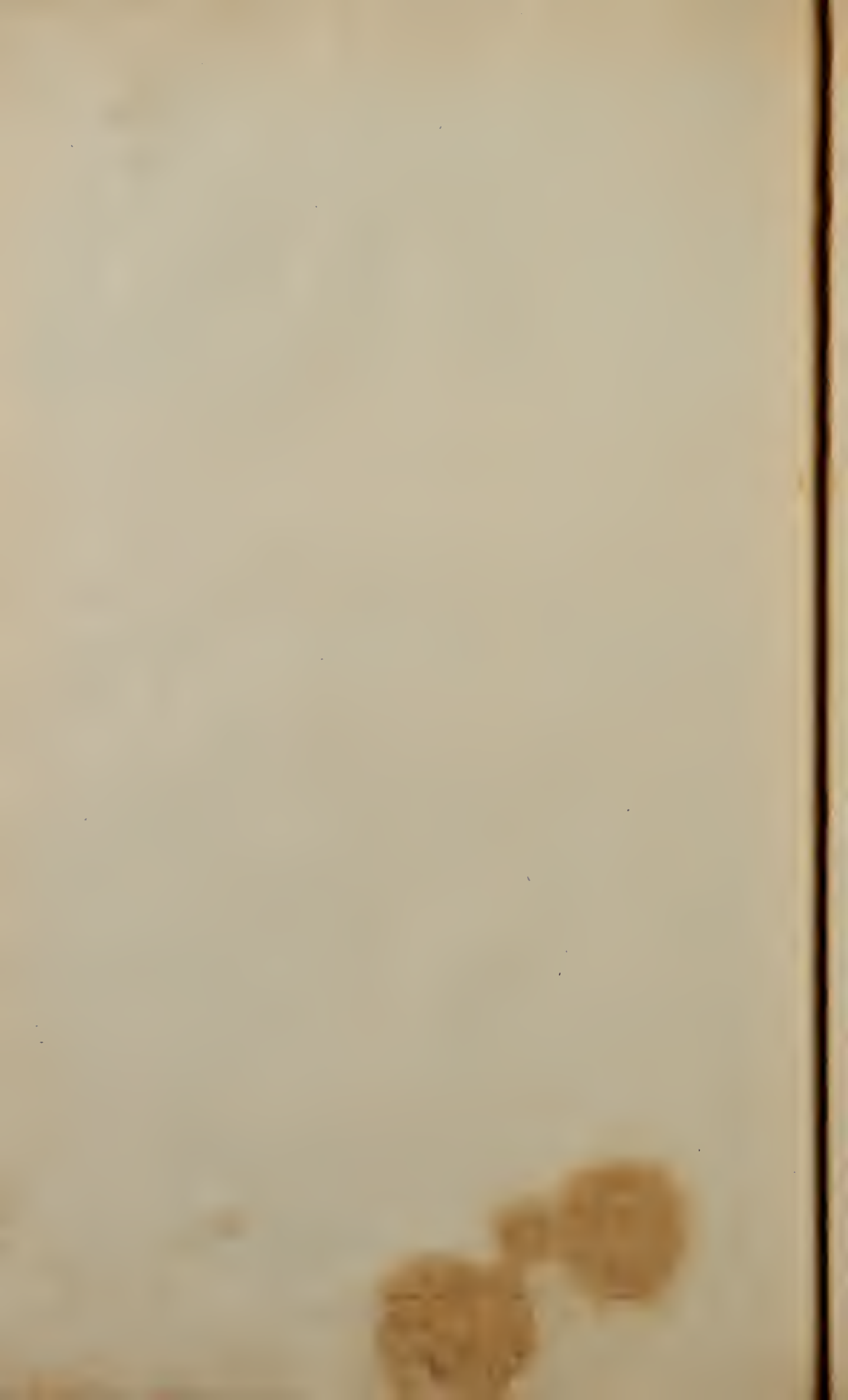


FIG. XLII.

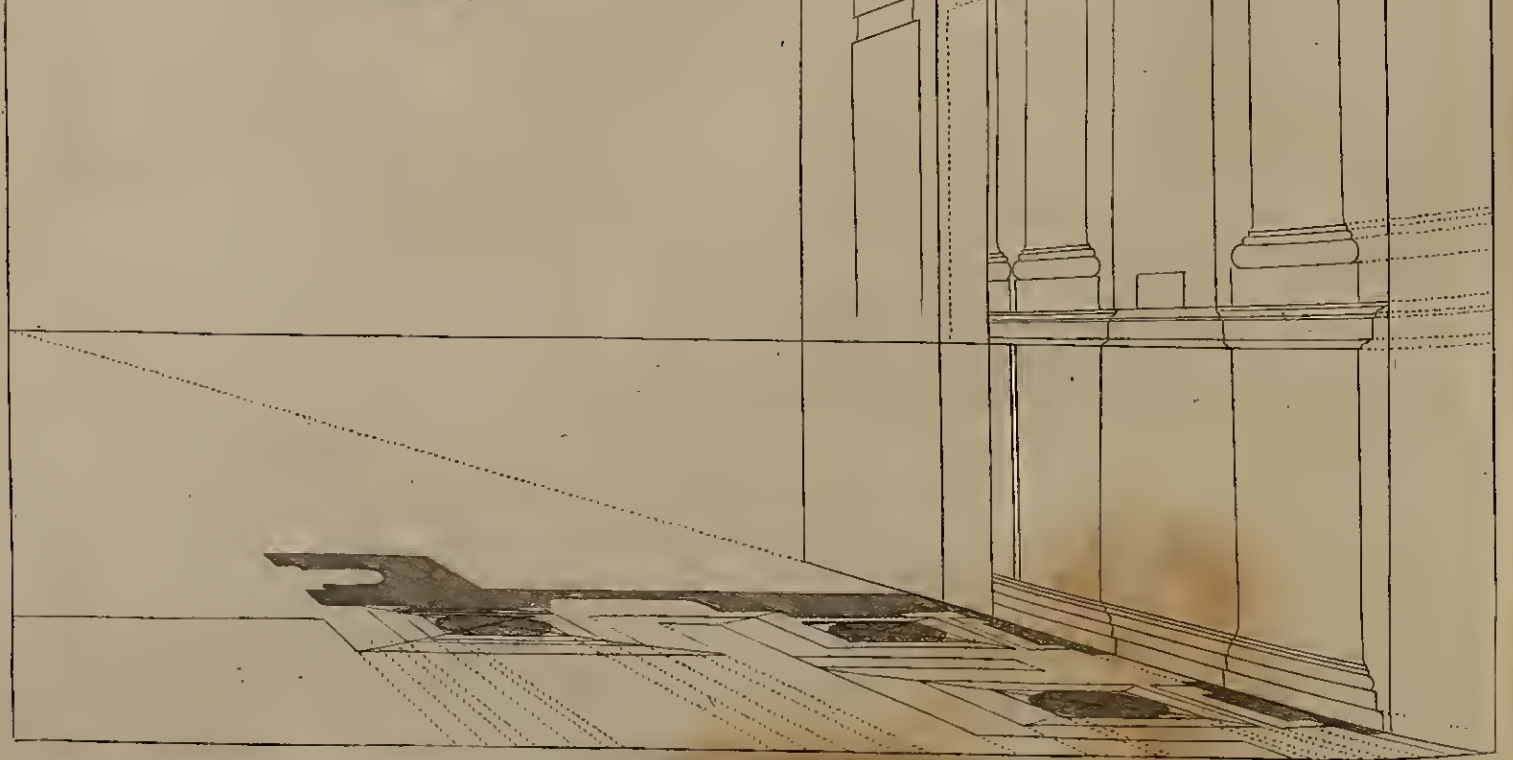
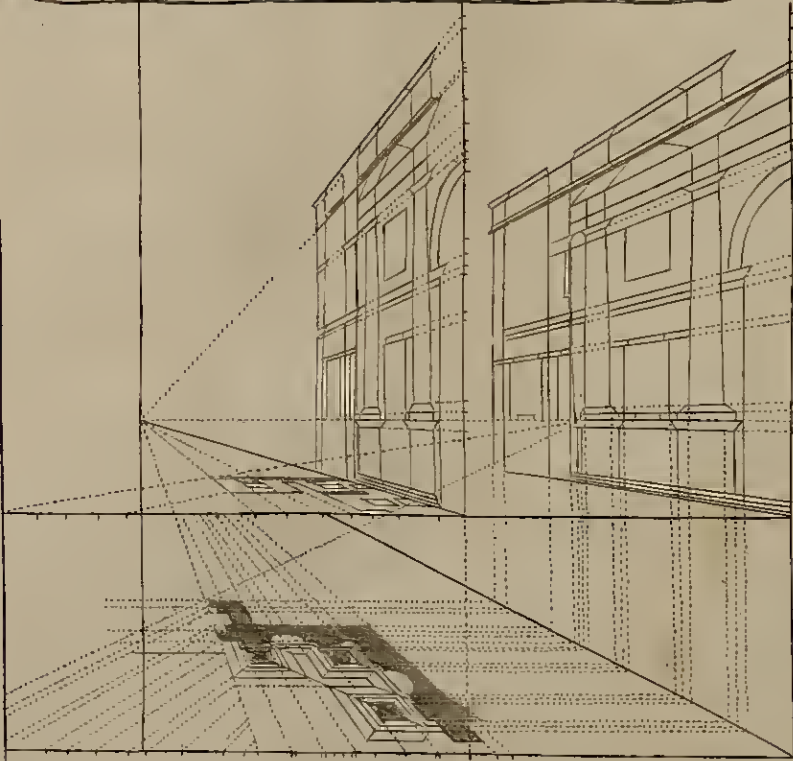


FIGURA Quadragesimasecunda.

Modus vitandi confusionem, in contractione vestigiorum, & elevationum.



CONTRACTIONES vestigii figuræ quadragesimæ, & elevationis figuræ quadragesimæ primæ, ob nimiam obliquitatem quam habent, valde confusæ sunt. Medebimur tamen incommodo isti, uti fecimus figuris decimâ & undecimâ. Et ostendit chartula, exhibens in parvo tum figuram hanc quadragesimamsecundam, tum quatuor sequentes.

The Forty-second FIGURE.

The Manner of avoiding Confusion, in reducing Plans and Elevations into Perspective.



HE Reducing into Perspective the Plan of the Fortieth Figure, and the Upright of the Forty-first Figure, would become very confus'd, through the great Obliquity of the Rays: We have therefore remedy'd the Inconveniencies of both, by the Methods explain'd in the Tenth and Eleventh Figures. And this Plate contains in little, what is more at large describ'd in Parts, as well in this, as the four subsequent Figures.

FIGURA Quadragesimatertia.

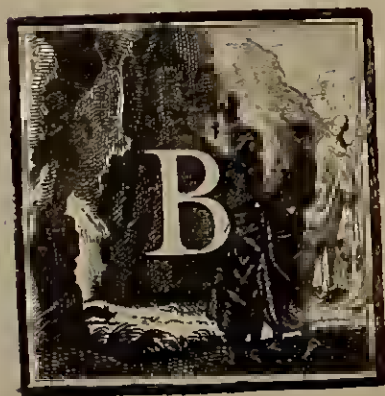
Contractio vestigii figuræ quadragesimæ.



*I*NEA plani multò remotior est à lineâ horizontali in hoc schemate, quàm in præcedenti. Ideo istud vestigium vacat omni confusione. Cætera patent ex iis quæ sæpius dicta sunt, & ex figuræ hujus inspectione. Oportet autem, rectas parallelas ad lineam plani, prolongari usque ad visualetm *TO*, (quæ cadit extra paginam) ut ad miniculo parallelarum, fiat elevatio longitudinis nostri ædificii, de quâ dicemus figurâ quadagesimaquartâ.

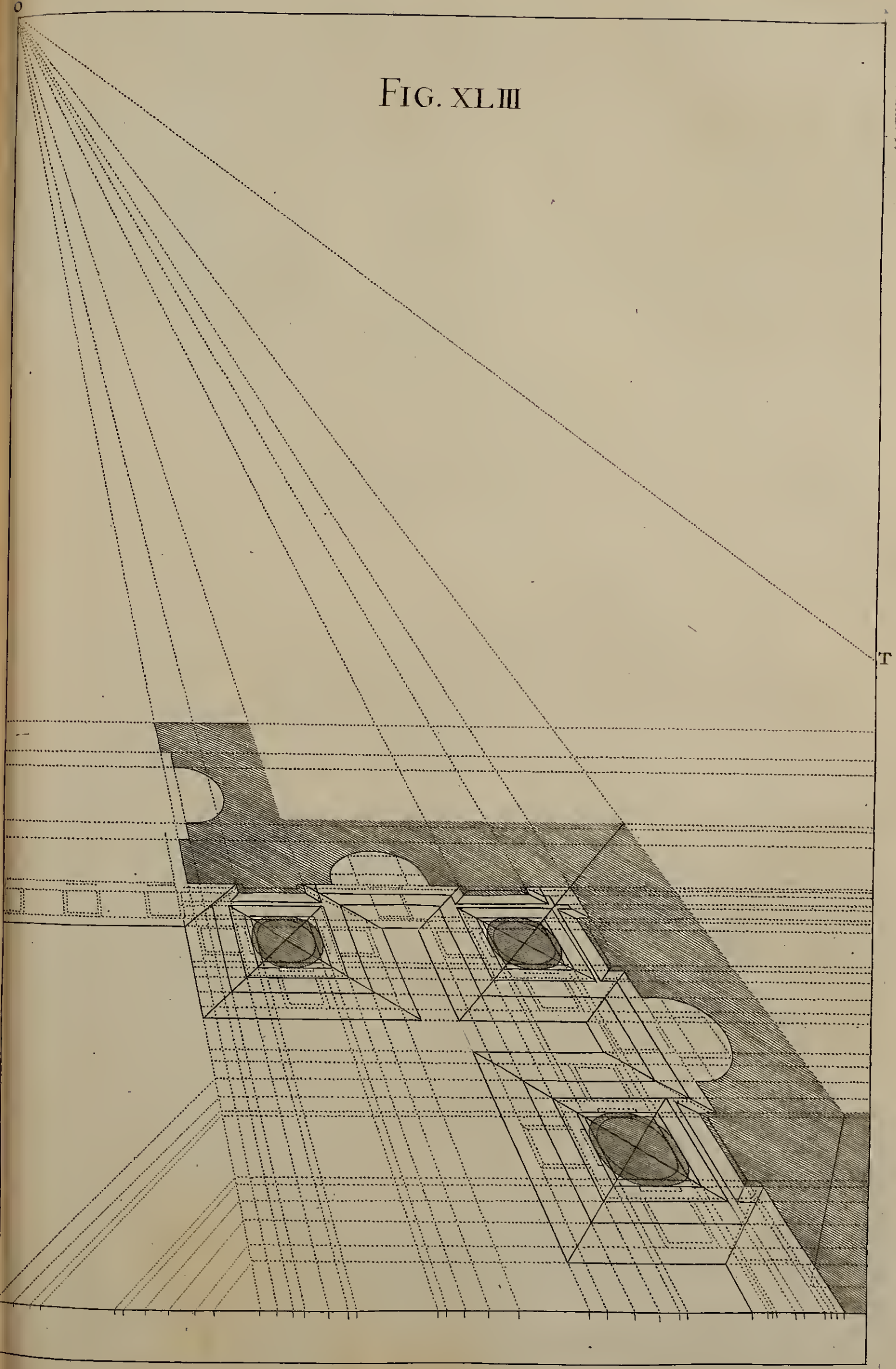
The Forty-third FIGURE.

The Plan of the Fortieth Figure in Perspective.



*B*Y placing the Ground-line in this, much more remote from the Horizontal, than it is in the foregoing Figure, all Confusion is here avoided. The rest is evident from what has been often said on this Head, and a bare Inspection of the Figure. Parallels to the Ground-line must nevertheless be continu'd to the Visual *TO*, which falls without this Page; that from them may be rais'd the Elevation of the Length of this Design, which we shall handle in the next Figure.

FIG. XLIII



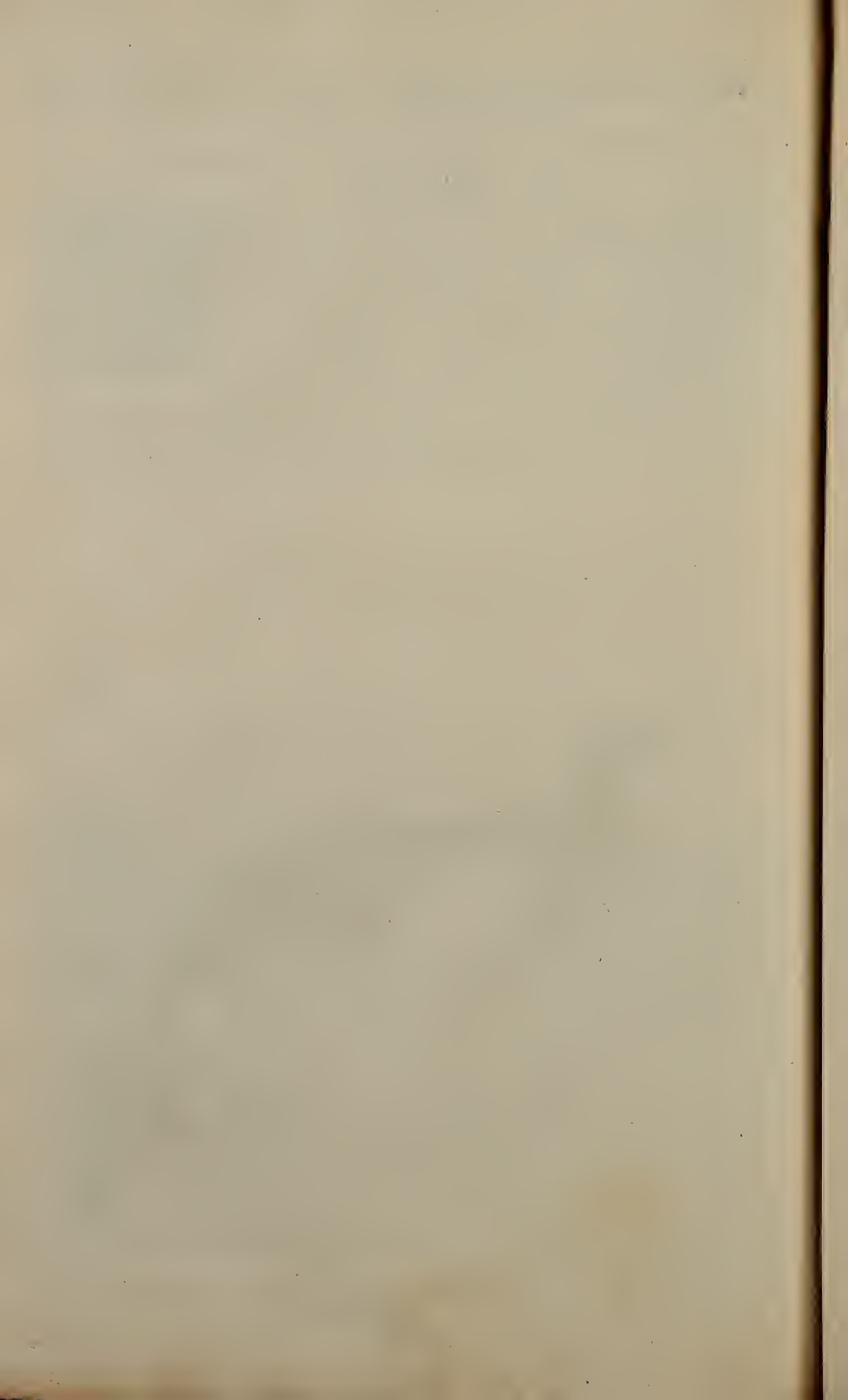


FIG. XLIV.



FIGURA Quadragesimaquarta.

Contractio elevationis figuræ quadagesimæprimæ.



ECTÆ parallele ad lineam plani figuræ quadagesimatertiæ, ubi pervenerint ad visualem *TO*, continuandæ sunt, more solito, cum parallelis ad lineam perpendiculararem. In hanc autem transferre oportet omnes divisiones, quas ex *Bazzio* habet elevatio hujus ordinis; ac ducere visuales. Quomodo autem, ad miniculo visualium & parallelarum, compleatur elevatio, constat ex figura, & clarius ex chartula figuræ quadagesimæsecundæ. Numeri 1, 2, 3, 4, geminati, ostendunt centra & altitudines semicircularum seu arcuum figuræ quadagesimæquintæ; videlicet, numerus inferior designat centrum, superior verò designat altitudinem semicirculi.

The Forty-fourth FIGURE.

The Elevation of the Forty-first Figure in Perspective.



HEN the Parallels to the Ground-line in the Forty-third Figure, are prolong'd to the Visual *TO*, they are then, as usual, to be continu'd Parallels to the Perpendicular: On which Perpendicular, those Divisions given by *Vignola*, for the Proportions of this Order, are to be transferr'd; and Visuals drawn from them to the Point of Sight. How by these Visuals and Parallels the Elevation is rais'd in Perspective, is manifest in part from this Figure, but more clearly from the Forty-second Figure. The Numbers 1, 2, 3, 4, which you here see doubl'd, give the Centers and Heights of Semicircles of the Arches in the Forty-fifth Figure; the lower Numbers denoting the Centers, and the upper Numbers the Heights of the Semicircles of the same.

FIGURA Quadragesimaquinta.

Dimidium ædificii Dörici opticè deformati.



UIC figuræ delineandæ plures præiverunt, ejusdemque latitudines mutuati sumus ex figura quadragesimatertia, altitudines ex quadragesimaquarta. Superest autem, ut lumina & umbrae scitè inducantur in singulas partes ædificii.

The Forty-fifth FIGURE.

One Half of the Dorick Design in Perspective.



THE foregoing Figures being preparatory to this, the Breadths are taken from the Forty-third, and the Heights from the Forty-fourth Figure. It only remains, that the Lights and Shades be skilfully dispos'd to each Part of the Work.

FIG. XLV.



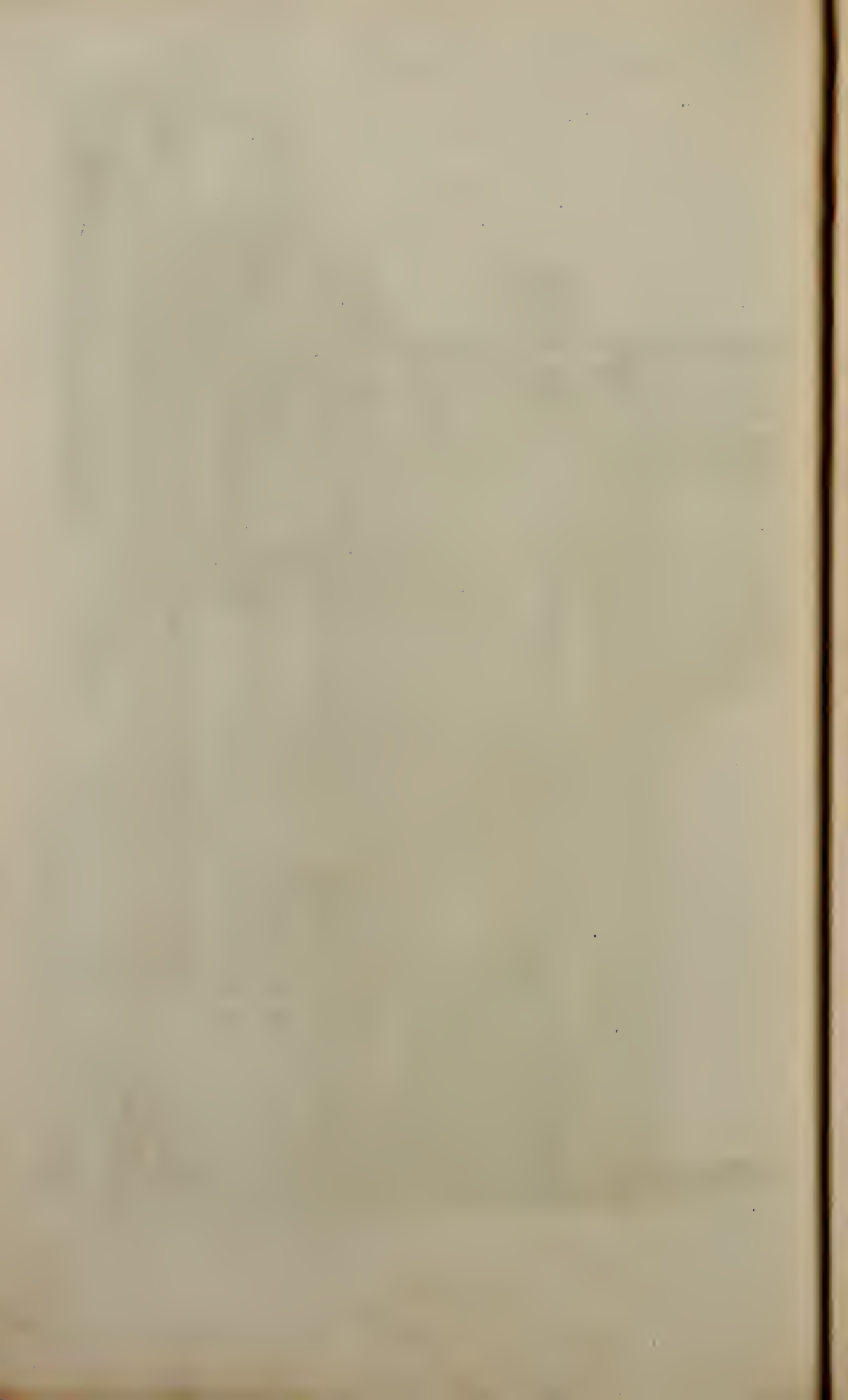


FIG: XLVI.

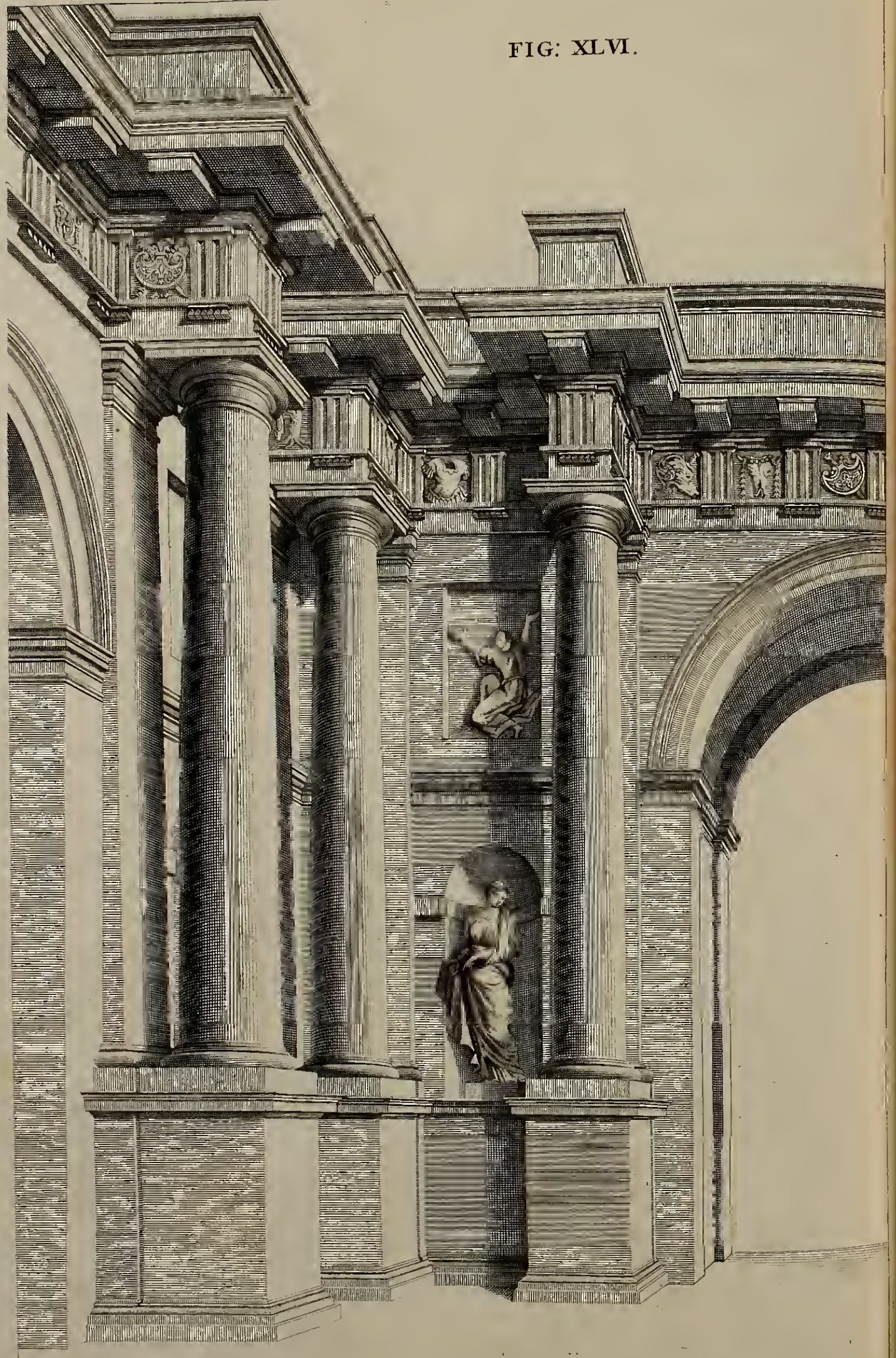


FIGURA Quadragesima sexta.

Alterum dimidium ejusdem ædificii.



UPERSEDERE poteram delineatione alterius medietatis ædificii nostri. Verùm operæ non peperci, ut ostenderem diversitatem luminum & umbrarum, quæ conveniunt partibus cæteroqui omnino similibus.

The Forty-sixth FIGURE.

The other Half of the same Design.



Might very well have omitted this Half of the Design, but that I spar'd no Pains, to shew the Diversity of the Lights and Shadows, that must be given to those Parts of the Work, which in other Respects are alike.

FIGURA Quadragesimaseptima.

Vestigia ædificii Ionici.



ESTIGIUM geometricum A ædificii Ionici, sub se habet suam deformationem B. Hæc autem ut evadat distinctior, lineam plani, quæ in sequentibus figuris habebit distantiam PE ab horizontali OE, deorsum protraximus in CD, ut etiam fecimus figurâ quadragesimasecundâ & quadragesimatertiâ. Linea visualis OM eundem habet usum, quem visualis OT figuræ quadragesimatertiæ; videlicet, ut in ea terminentur parallele ad lineam plani ex membris vestigii B, eademque continuentur cum aliis parallelis ad rectam EC, pro deformandâ elevatione quam apponemus figurâ quadragesimanonâ.

The Forty-seventh FIGURE.

The Plan of an Ionick Building.



THE Geometrical Plan of this *Ionick* Work is A, underneath is its Perspective B; to render which more distinct, the Ground-line that in the following Figures has only the Distance PE from the Horizontal EO, is here remov'd downward to CD, as was

done in the Forty-second and Forty-third Figures foregoing. The visual Line OM is of the same use as that of OT in the Forty-third Figure; namely, to terminate the Lines which are drawn from the Members of the Plan B parallel to the Ground-line; from whence they are again continu'd parallel to the Perpendicular EC, for making in Perspective the Elevation inserted in the Forty-ninth Figure.

The Horizontal line
The Distance is 16. Modules without the line E. C.

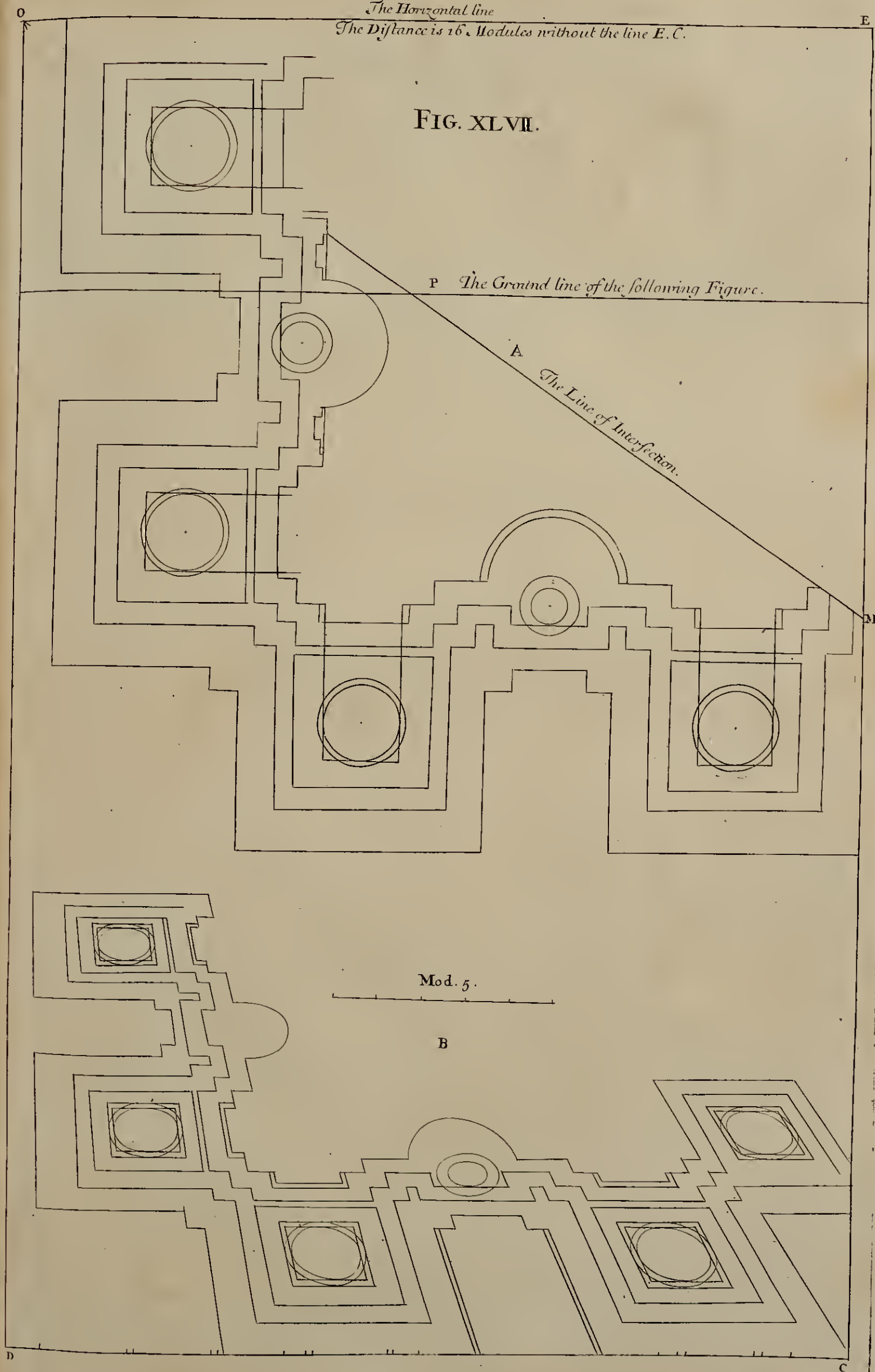
FIG. XLVII.

P The Ground line of the following Figure.

A
The Line of Intersection.

Mod. 5.

B



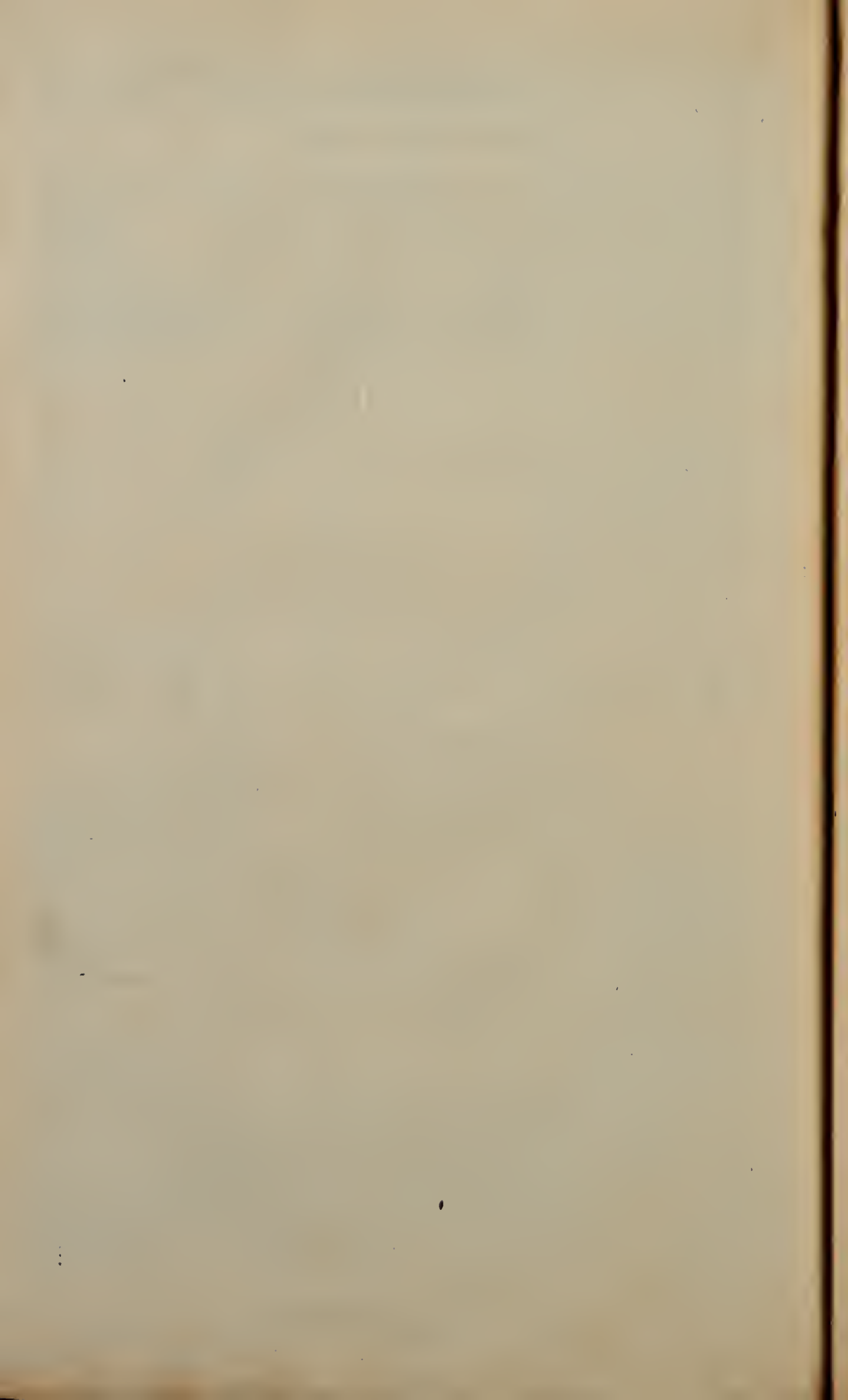


FIG. XLVIII.

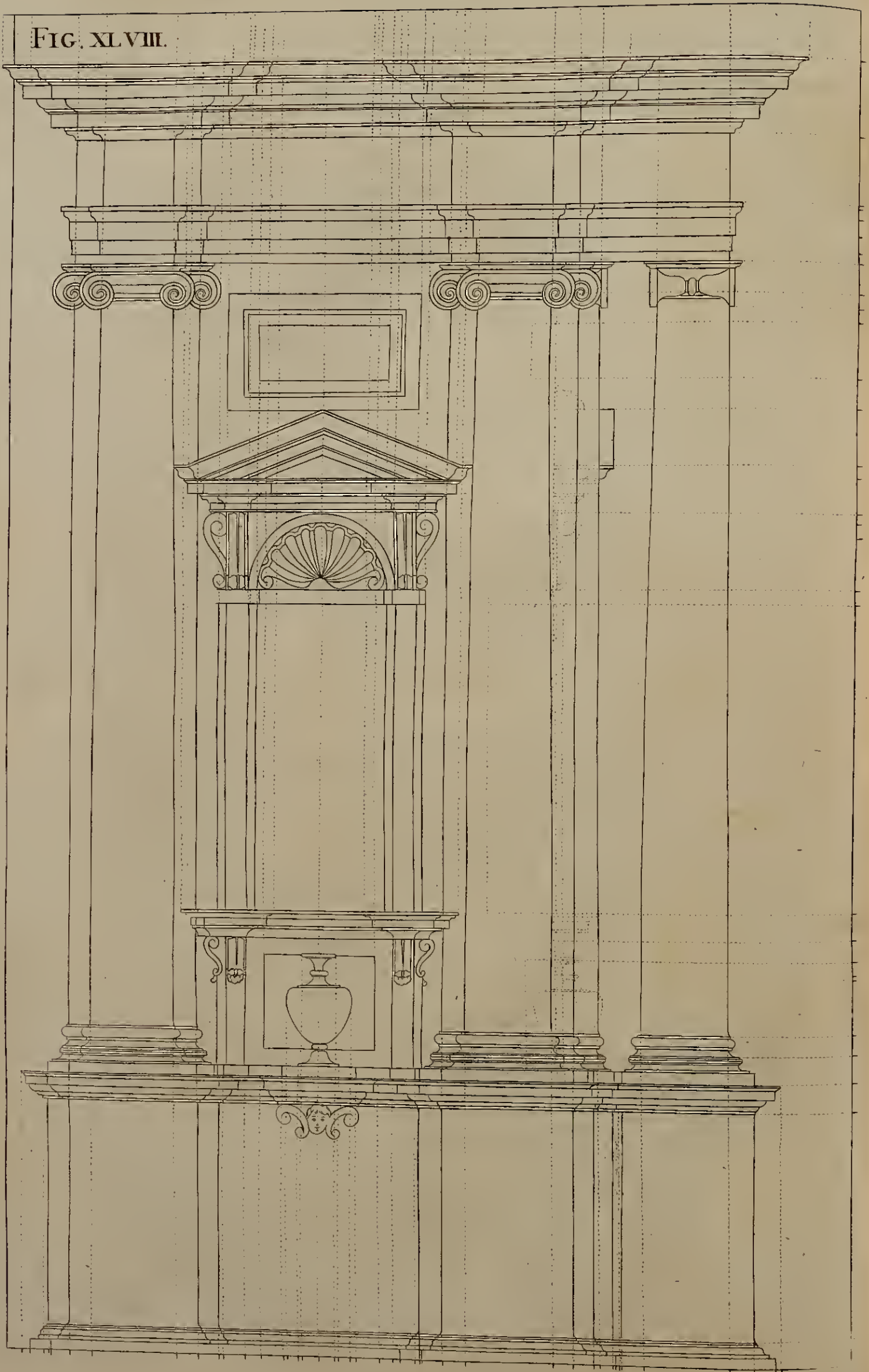


FIGURA Quadragesima octava.

Elevatio geometrica ædificii Ionici.

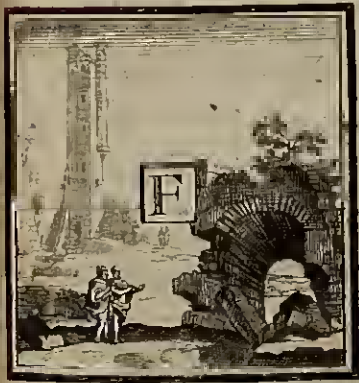


X hac elevatione quæ clarè ostendit membra totius ædificii secundum longitudinem dissecti, desumuntur altitudines ac terminationes membrorum singulorum. Peritiores tamen hac figurâ delineandâ supersedere solent, quia terminationes haberi possunt ex vestigio A figuræ

quadragesima septimæ, altitudines verò ponendæ iterum sunt figurâ sequenti.

The Forty-eighth FIGURE.

The Geometrical Upright of the foregoing Ionick Design.



FROM this Figure (which distinctly shews the Composition of the whole Work, in respect of its Length) are taken the Heights and Terminations of the several Members thereof. But those that are skill'd in this Art, usually omit the delineating these Elevations; because the Terminations may be taken from the Plan A in the Forty-seventh Figure; and the Heights must be repeated in the following Figure.

FIGURA Quadragesimanona.

Deformatio elevationis ædificii Ionici.



ÆC figura continens deformationem præcedentis elevationis, perficitur methodo illa, quam ostendimus figurâ quadragesimasecundâ; nimirum, ex vestigio *B* figuræ quadragesimaseptimæ, ducere oportet parallelas ad lineam plani *CD*, quæ ubi pervenerint ad visualem *OM*, continuandæ sunt cum aliis parallelis ad lineam *EC*. Easdem parallelas in hanc figuram translatas secant visuales ex linea recta *AB*, in qua positiæ sunt altitudines ædificii Ionici, desumpta vel ex figura præcedenti, vel ex Barozzio. Nullum autem est punctum in membris hujus elevationis, quod non inveniatur per sectiones visualium ex linea *AB*, cum parallelis ad eandem lineam.

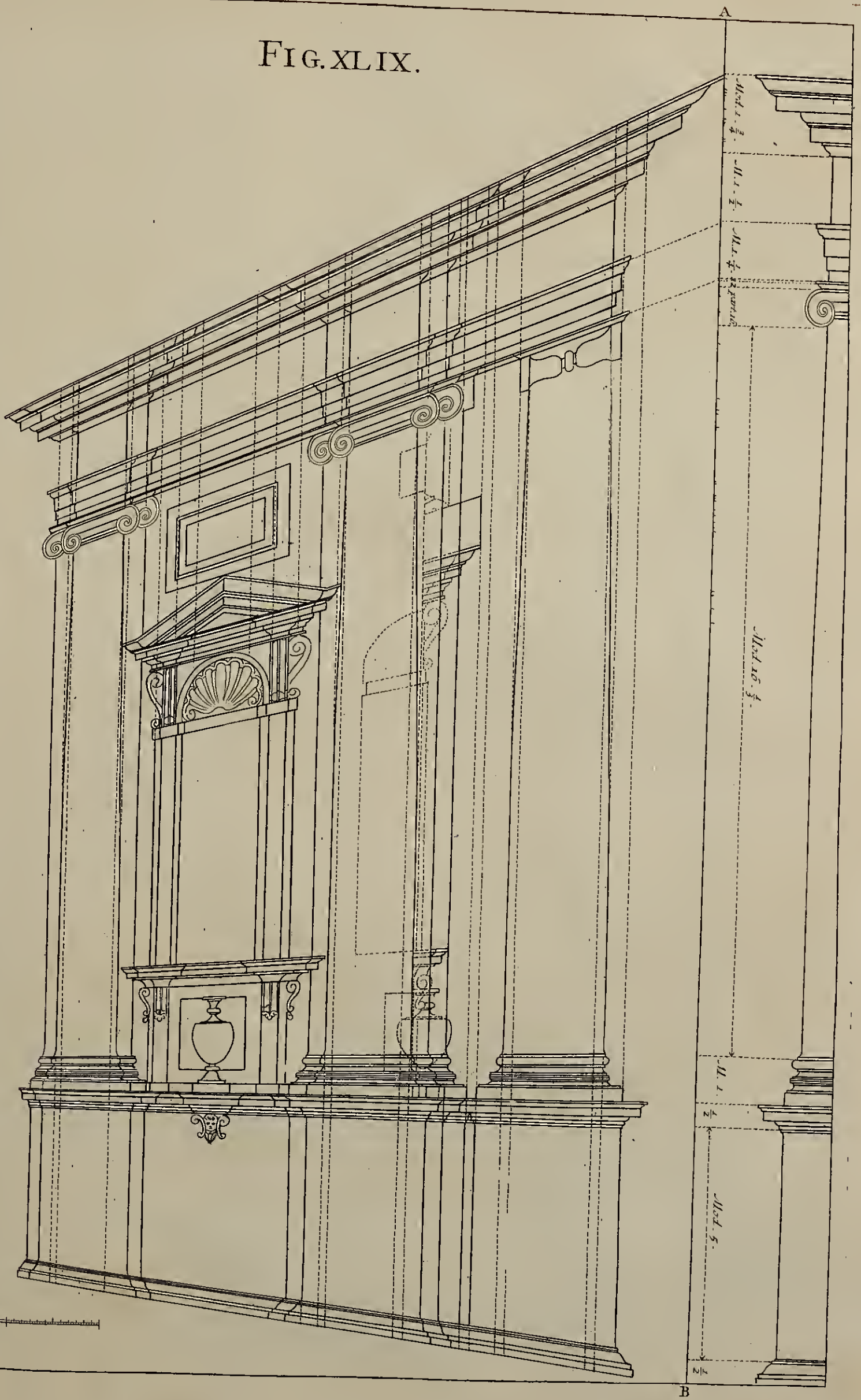
The Forty-ninth FIGURE.

The Elevation of the Ionick Design in Perspective.



HIS Plate containing the Perspective of the foregoing Upright, is drawn by the Method laid down in the Forty-second Figure; to wit, from the Plan *B* of the Forty-seventh Figure, Parallels to the Ground-line *CD* are prolong'd to the Visual *OM*; and thence are continu'd Parallels to the Perpendicular *EC*. These being transferr'd into this Figure, are intersected by the visual Lines that proceed from *AB*, which contains the Heights of this *Ionick* Composition, agreeable to the foregoing Figure, and the Rules deliver'd by *Vignola*. Now there is no Point in any Member of this Upright, but may be found by the Intersection which the visual Line from *AB* makes with its respective Perpendicular.

FIG. XLIX.



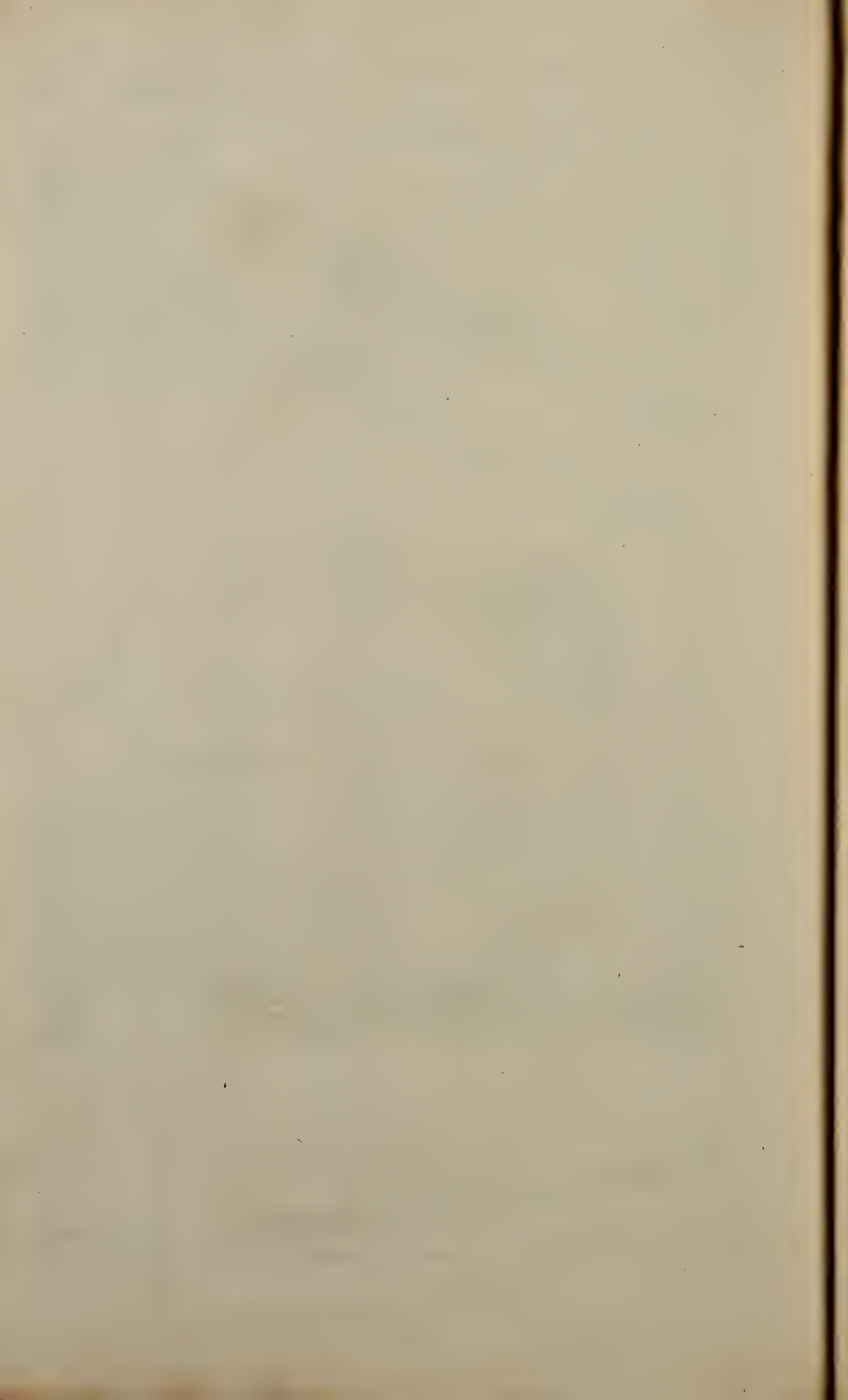




FIG. I.

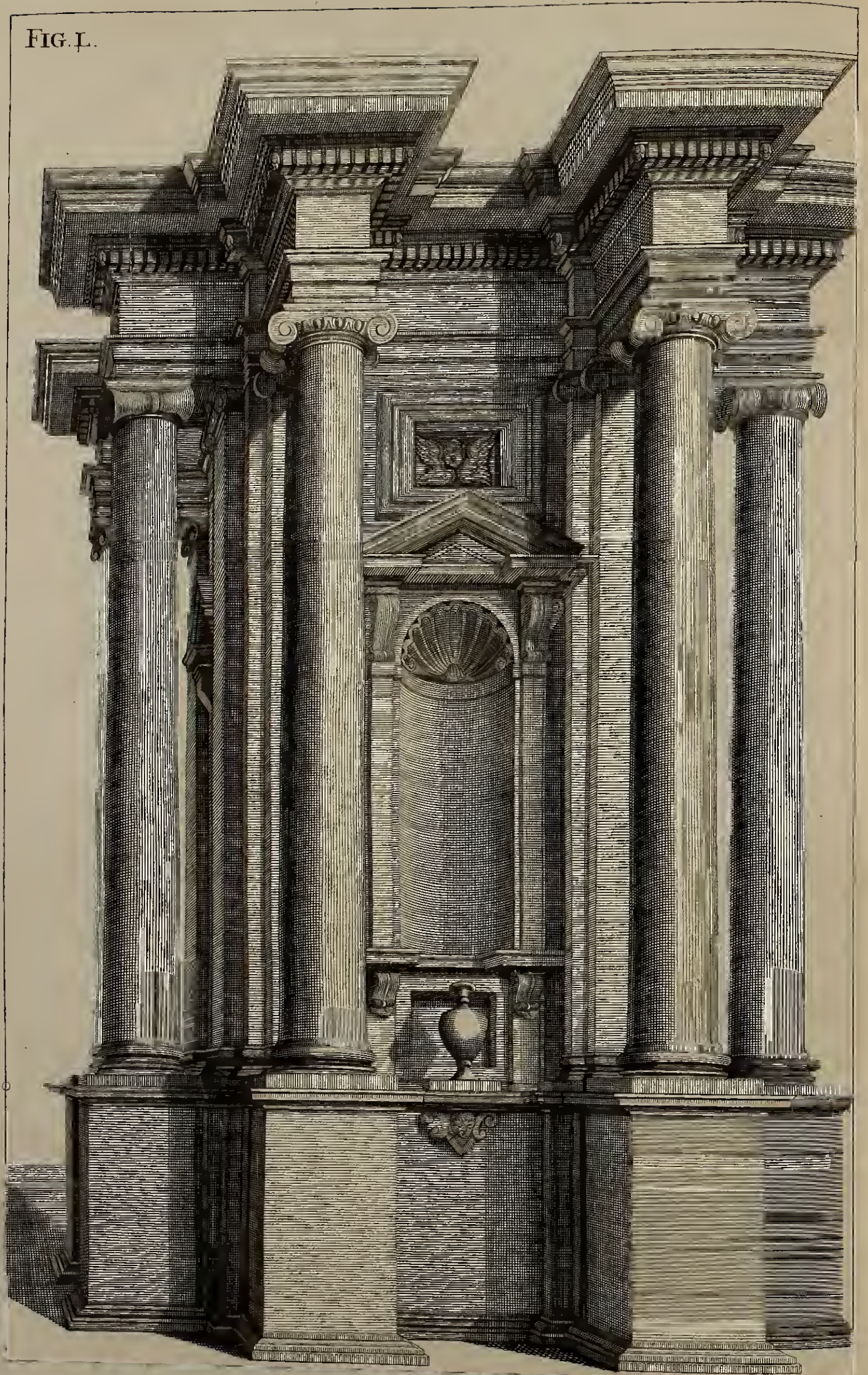


FIGURA Quinquagesima.

Architectura Ionica.



X vestigio figuræ quadragesimæseptimæ, & ex elevatione figuræ quadragesimænonæ, eruitur hoc ædificium Ionicum, quod esse poterit vel principium alicujus turris campanariæ, aut basis cujuspiam arcûs triumphalis. Vereor ut cælator suam diligentiam in hoc schemate satis probaverit. Ejus tamen errata facilè ipse deteges, & omni studio cavebis.

The Fiftieth FIGURE.

A Design of Ionick Architecture.



FROM the Plan of the Forty-seventh Figure, and from the Upright of the Forty-ninth Figure, is drawn this *Ionick* Piece; which might well serve for the lower Order of a Turret, or for part of a Triumphal-Arch. I fear the Engraver has not been so exact in this Scheme, as he ought; but you will readily discover his Mistakes, and carefully beware of them.

FIGURA Quinquagesima prima.

Ordo Corinthius.



OMPLECTITUR hæc pagina molem contractam Ordinis Corinthii, cum suis præparationibus. Vestigium *A* exhibet parietem pone columnas cavum instar canalis. Idem vestigium optice deformatur in *D*: omisâque elevatione geometricâ, per ejus altitudines notatas in lineâ *BC* projicitur elevatio; ac methodo consuetâ, ex vestigio & elevatione componitur ædificium, addito statuæ unius ornamento.

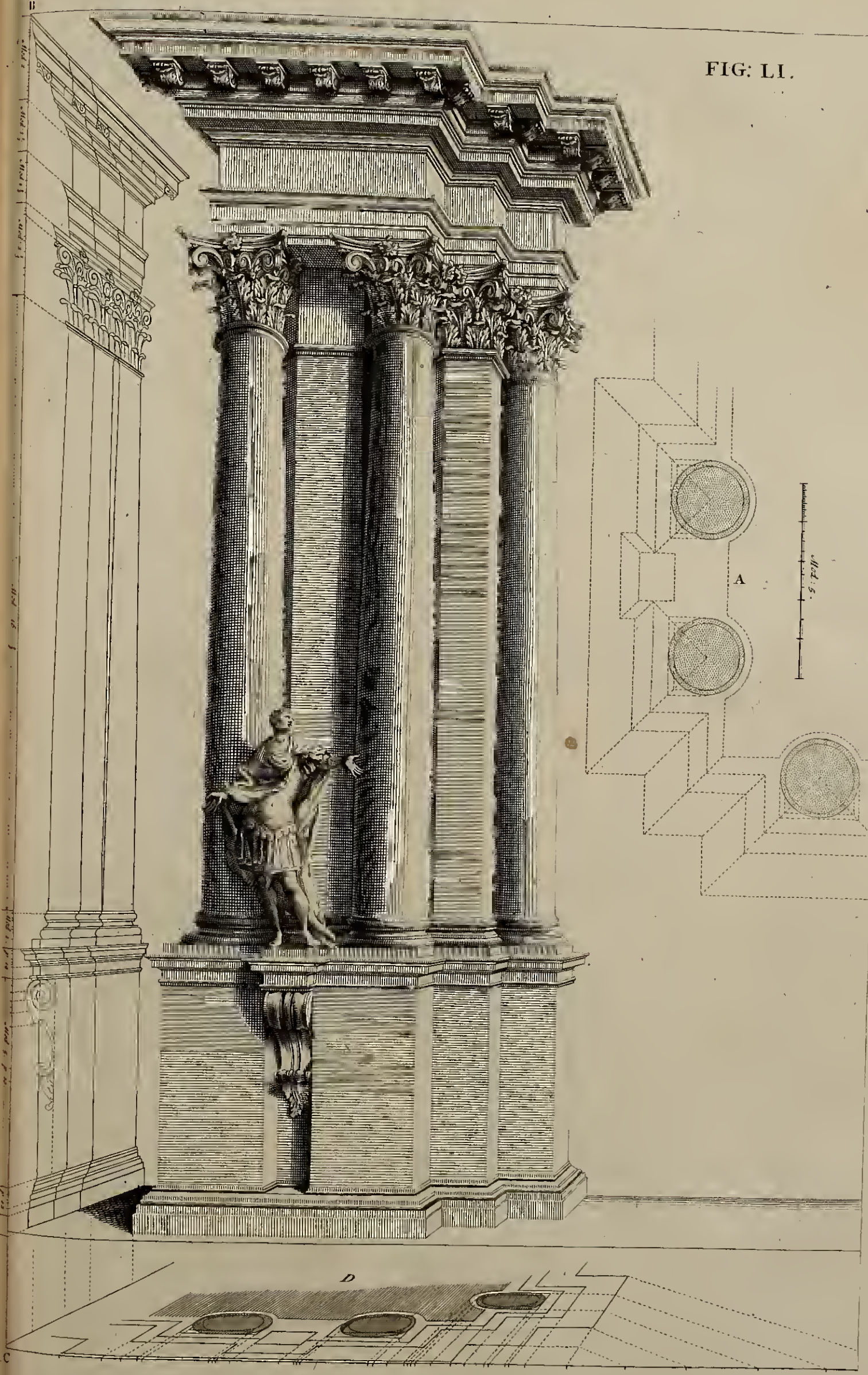
The Fifty-first FIGURE.

A Corinthian Design in Perspective.

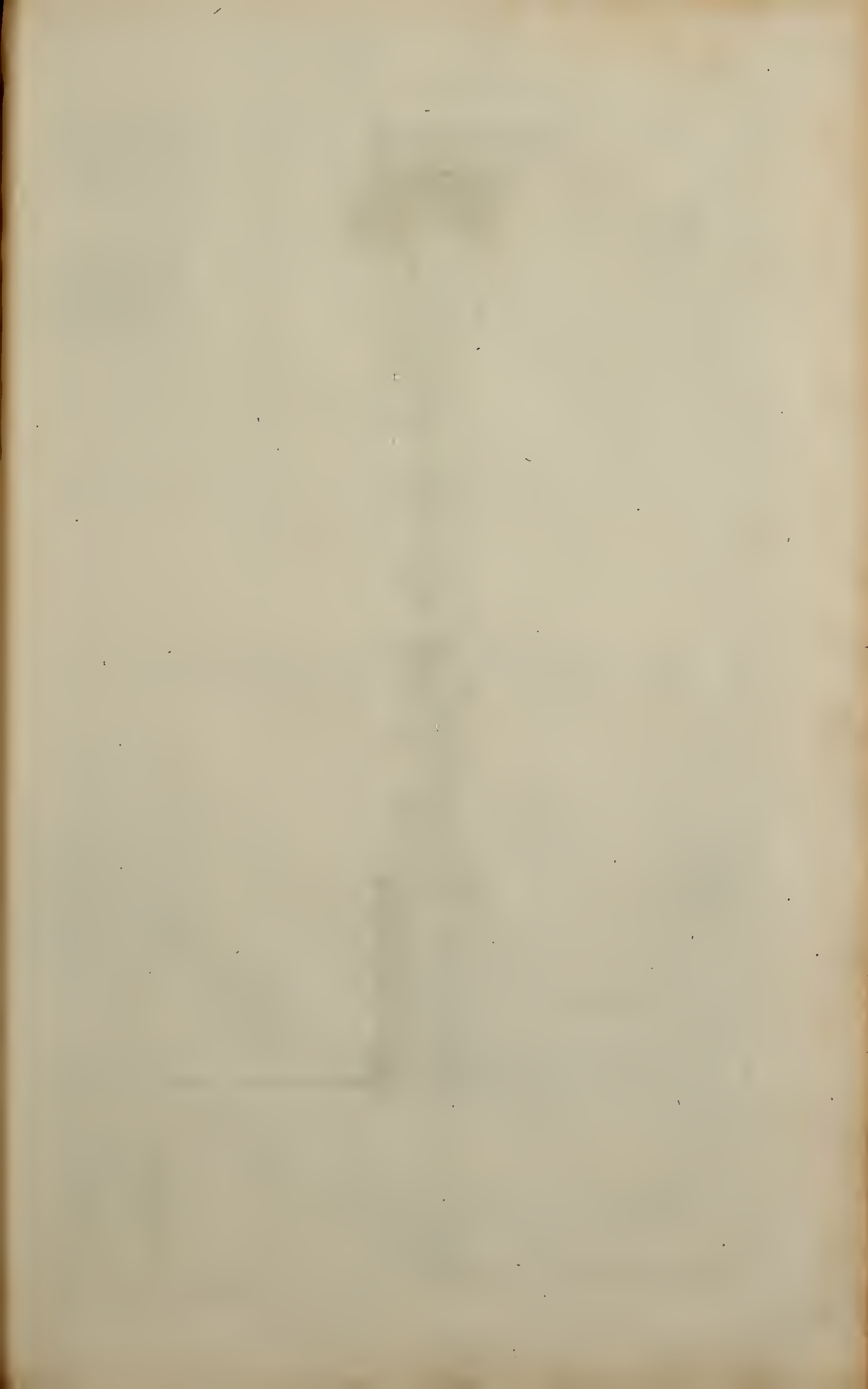


HIS Plate contains the Perspective of a Corinthian Work, with its Preparations. The Geometrical Plan *A* shews the Wall wrought hollow behind the Columns. The said Plan in Perspective is *D*: and leaving out the Geometrical Elevation, the Perspective thereof is describ'd, by transferring the Heights of the former into the Line *BC*. From the Perspective-Plan and Upright the Design is finish'd after the usual Manner; to which is added the Ornament of a single Statue.

FIG. LI.







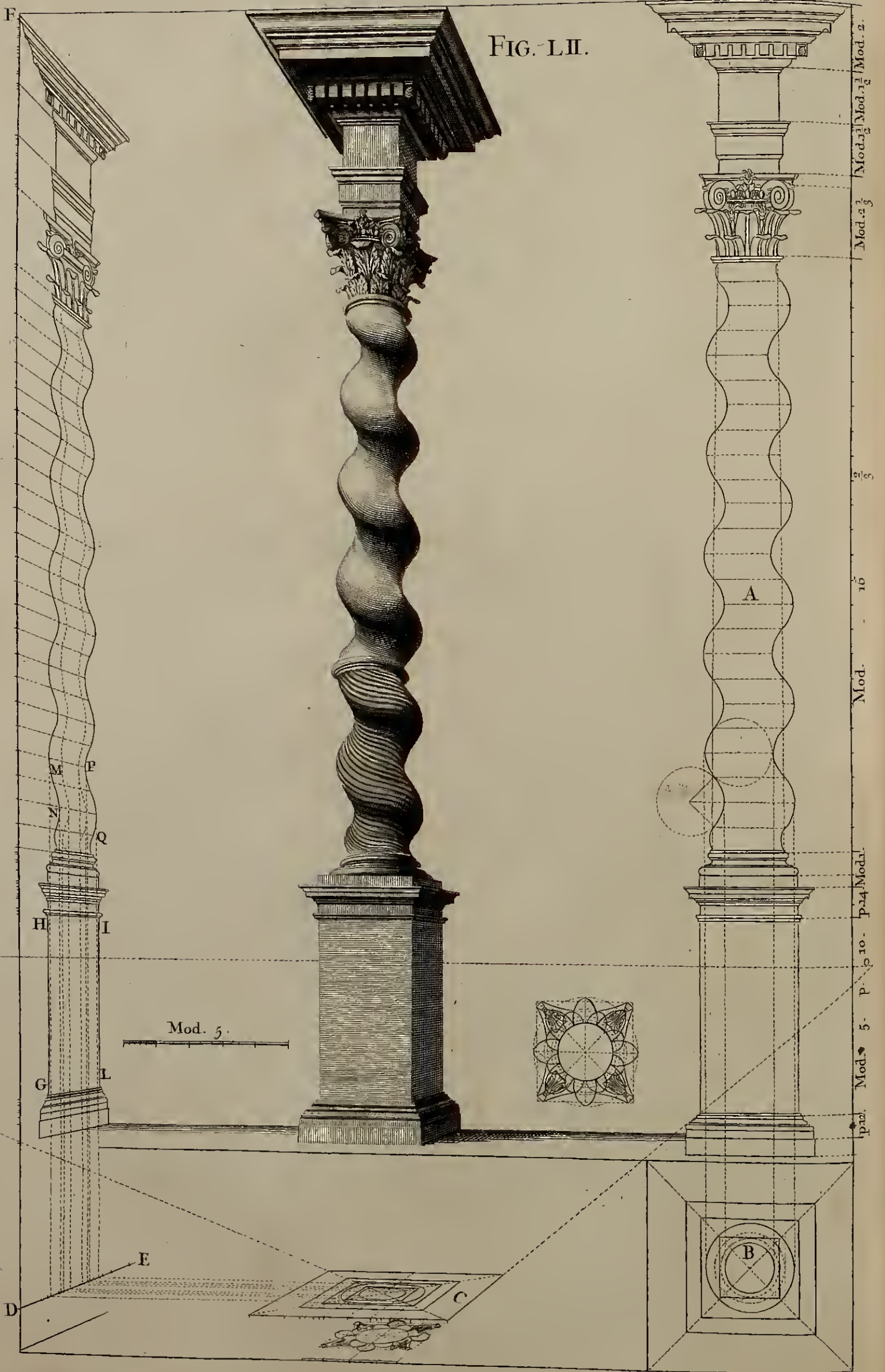


Figura Quinquagesima secunda.

Delineatio columnæ spiralis, Ordinis Compositi.



POSITA elevatione geometrica columnæ rectæ, ac divisione illius in vigintiquatuor partes æquales, columna spiralis absolvitur per partes circumferentiæ circulorum, quorum diametri sunt æquales diversis latitudinibus columnæ rectæ, ut ostendit figura in A. Ad projectionem opticam elevationis, notandæ sunt quatuor occultæ rectæ, quæ ex terminis convexitatis & concavitatis infimarum spirarum ejusdem elevationis A, descendunt ac desinunt in duos circulos vestigii geometrici B. Vestigium ipsum optice inminutum habetur in C: eadem autem sunt maximæ hinc inde latitudines, tum in circulo majori, tum in convexitate infimarum columnæ spirarum; eadem sunt maximæ latitudines, tum in circulo

minori, tum in concavitate ipsarum spirarum; ut dignosces applicando regulam spiris simul & circulis. Ex quatuor punctis maximæ latitudinis duorum circulorum, incipiunt quatuor lineæ parallelæ ad lineam plani, quæ ubi pervenerint ad visualem ED, continuandæ sunt cum parallelis ad perpendicularum DF. In eandem lineam DF, ex elevatione A transferre oportet vigintiquatuor partes æquales altitudinis columnæ, ac ducere visuales ad O punctum oculi. Per sectionem autem visualium cum prædictis quatuor parallelis ad lineam DF, ducuntur lineæ undulatæ MN, PQ, ex quibus eruuntur lineæ utrinque terminativæ columnæ spiralis nitidæ. Ex linea verò GH habetur facies anterior stylobatæ, columnæ & coronicis; ex linea IL habetur facies eorum posterior.

The Fifty-second FIGURE.

The Description of a wreath'd Column, of the Composite Order.



HAVING made the Geometrical Elevation of a streight Column, and divided the Height of its Shaft into Four and twenty equal Parts; the Wreathing is describ'd by Parts of the Circumference of Circles, whose Diameters are equal to the severall Breadths, or Diameters, of the streight Column; as is shewn in the Figure A. For putting the Upright into Perspective, four streight occult Lines are of use, which descend from the Extent of the Swellings and Sinkings of the lower Wreaths of the Column A; and terminate in two Circles of the Geometrical Plan B.

The said Plan laid down in Perspective is C. The utmost Extent of the greater Circle determines that of the Convex Parts of the lower Wreaths: The greatest Breadth of the lesser Circle gives that of the hollow Parts of the said Wreaths; as may be perceiv'd, by applying a Ruler from the Wreaths to the Circles of the Plan. From the four Points of greatest Breadth in those Circles, four Lines parallel to the Ground-line are continu'd to the Visual ED, and thence again continu'd parallel to the Perpendicular DF. From the Elevation A, the Four and twenty equal Parts of the Columns Height are transferr'd into the Line DF, and Visuals drawn from each to the Point of Sight O. By the Intersections of those Visuals with the four Perpendiculars afore-said, are drawn the wav'd Lines MN, PQ; from which, both the Out-lines of the finish'd Column are describ'd. But the Fore-part of the Pedestal, Column, and Cornice, is taken from the Line GH; the Back-part of the same from the Line IL.

Fig. Quinquages. tertia A.

Ordines Architecturæ, desumpti ex
Palladio & Scamozzio.



E Ordinibus Architecturæ,
præter Barozzium, egregie
scripserunt Palladius & Scamozzius; ac singuli, jure merito, suos habent affectas & patronos. Ut ergò, etiam juxta laudatissimorum Autorum placita, opticas projectiones facere possis, omnes Ordines in hac paginâ exhibere volui, ut in eorum Libris inveniantur.

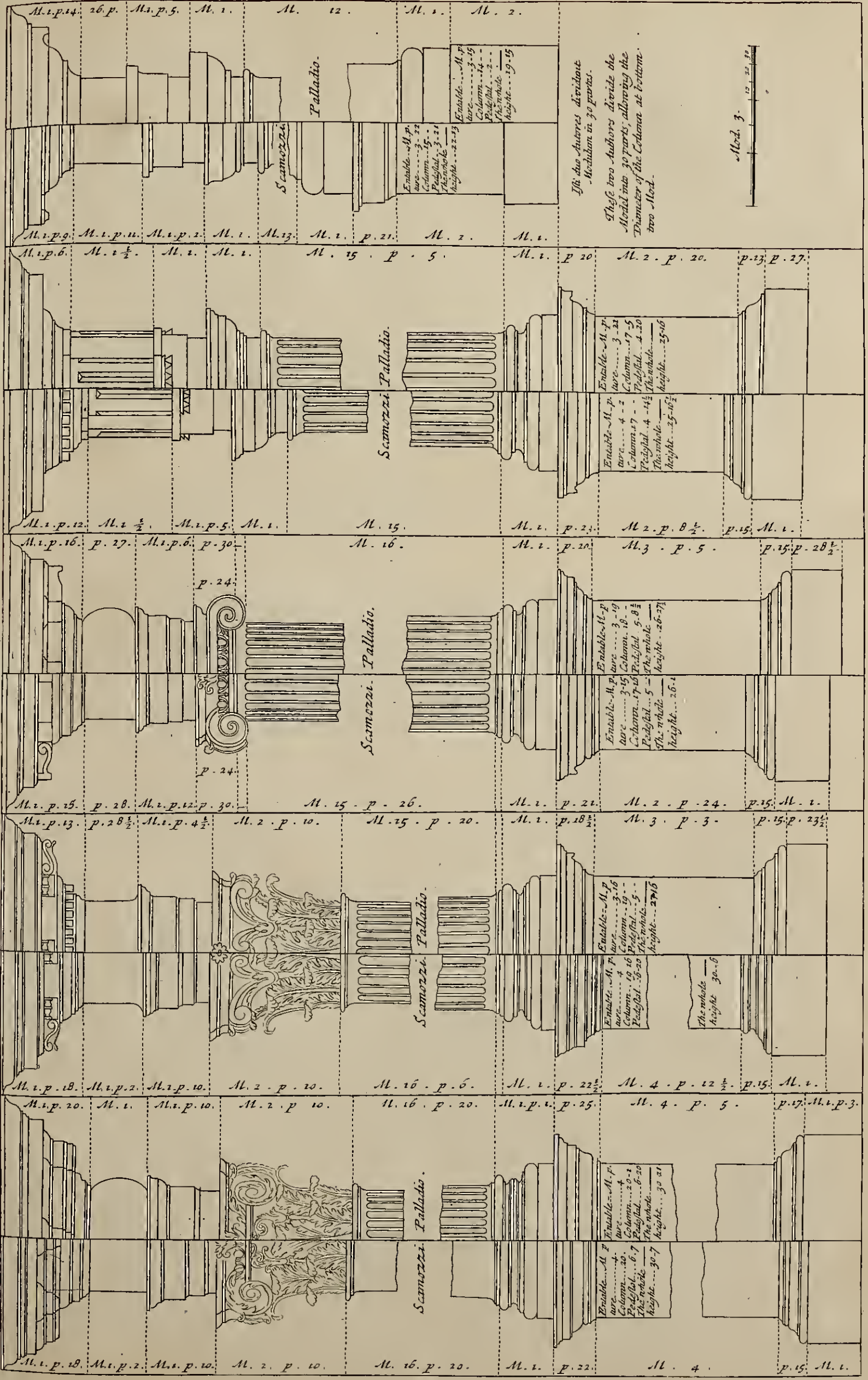
The Fifty-third Figure A.

*The Orders of Architecture, taken from
Palladio and Scamozzi.*



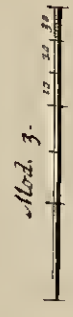
ESIDES Vignola, Palladio and Scamozzi have also written excellently well of the Orders of Architecture; and each of 'em have deservedly their Followers and Admirers. That you might therefore be enabled to make Designs in Perspective, after the Proportions of the most celebrated Masters, I have in this Plate given you the Measures of all the Orders, as deliver'd by them in their Books.

FIG. LIII. A.



Ubi duo Auctores dividunt
Modum in 30 partes.

These two Authors divide the
Modul into 30 parts, allowing the
Diameter of the Column at bottom
two Modul.



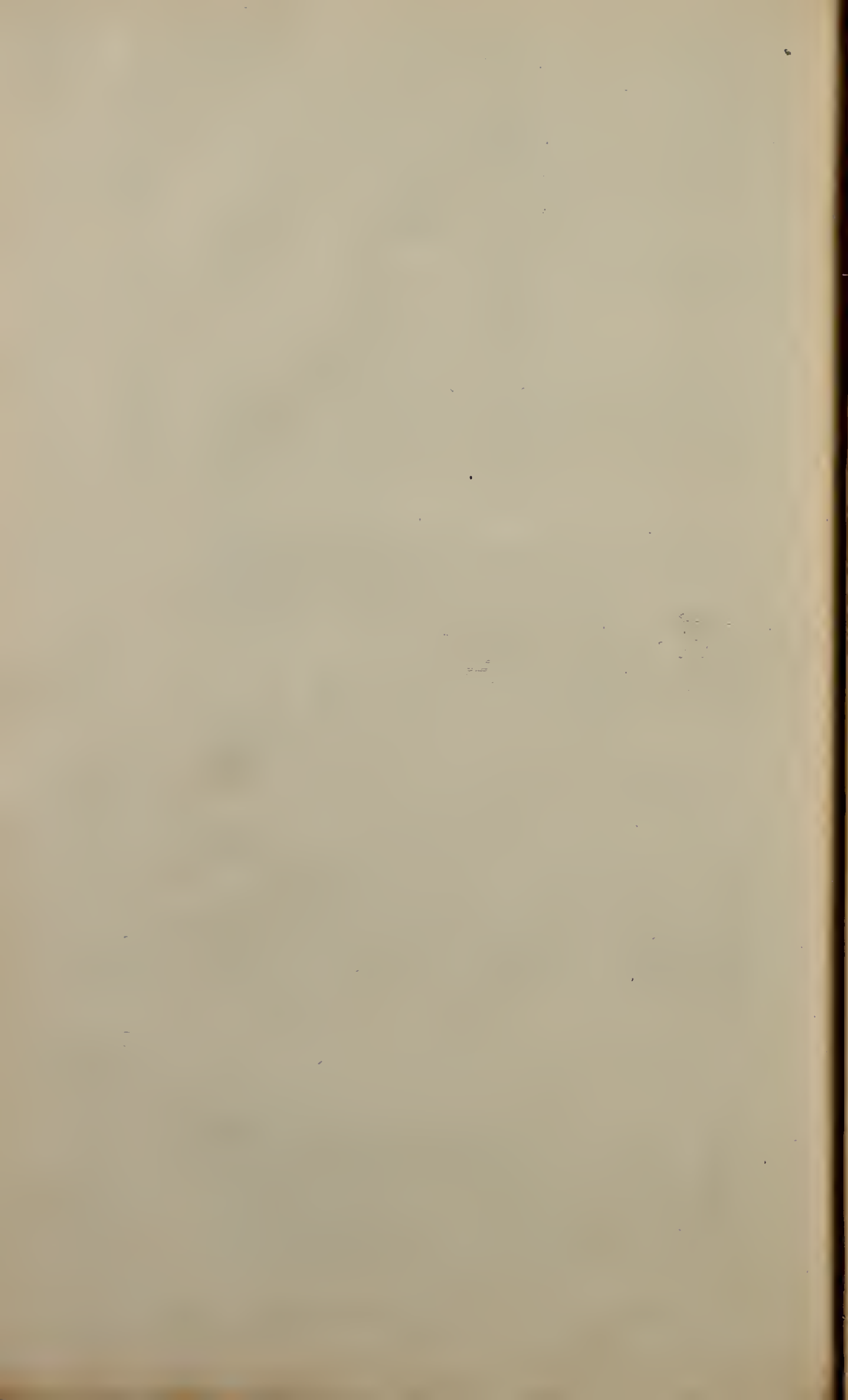




FIG. 111. B.

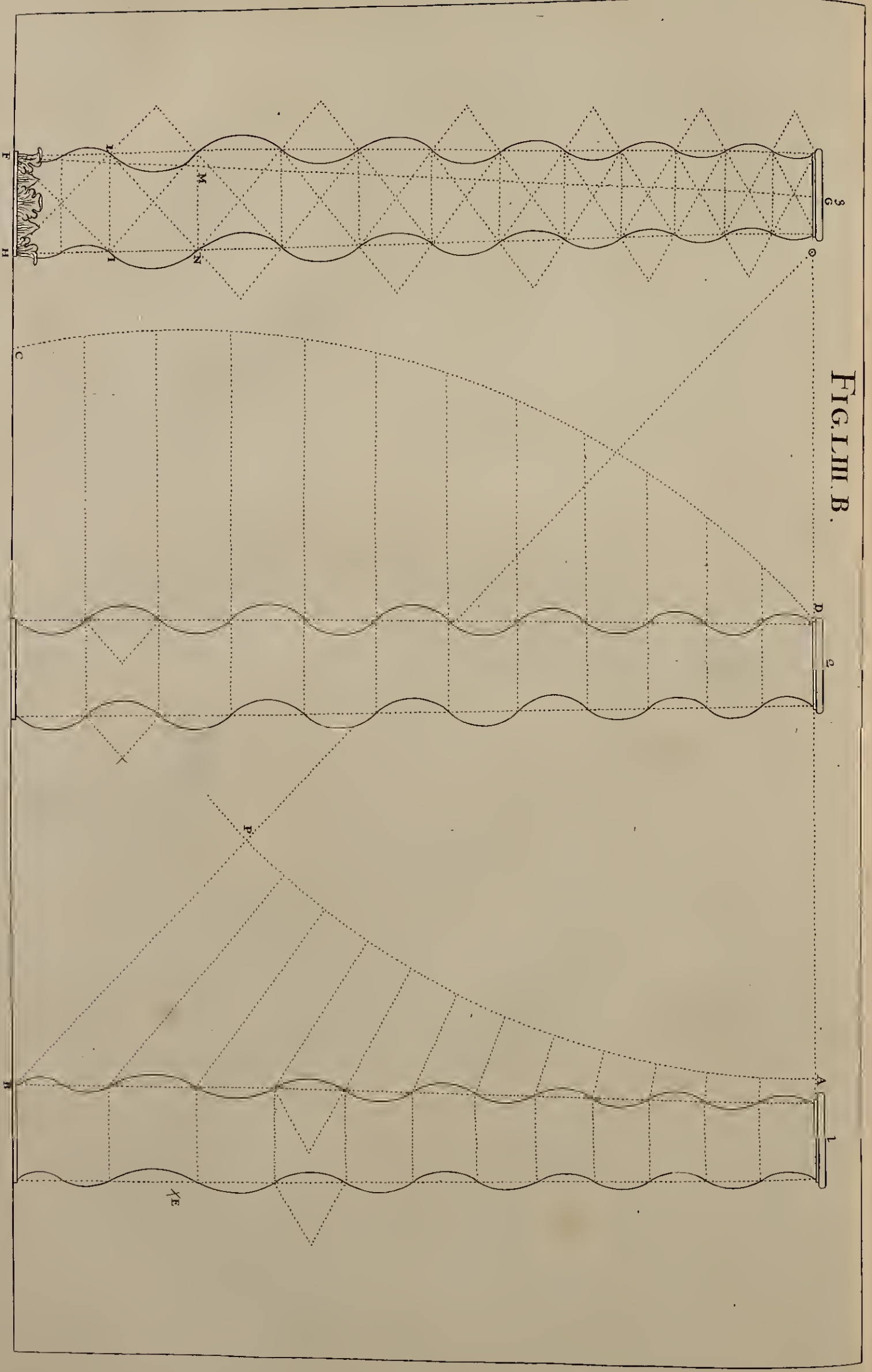


Fig. Quinquages. tertia B.

The Fifty-third Figure B.

Modus triplex delineandi columnas spirales.

Three different Ways of delineating wreath'd Columns.



OLIMNÆ figure superioris carent ea concinnitate, qua prædite sunt columnæ spirales aeneæ celeberrimi Equitis Bernini ad sepulcrum S. Petri in Vaticano. Itaque methodum triplicem exhibeo ad minuenda spatia totius altitudinis columnæ.

1. Retta OA sit æqualis altitudini AB columnæ. Fiat autem recta OB, & arcus AP ex centro O, divisus in partes duodecim æquales, ducento rectas, quæ per puncta divisionum desinant in columnam rectam; ac demum fiant parallele ad basim: Spatia inter has parallelas dabunt aperturam circini pro triangulis æquilateris & pro spiris, ut ostendit columna 1.



HE wreath'd Columns describ'd in the Fifty-second Figure, being divided into Twenty-four equal Parts, want very much of that Elegancy of Contour, which is visible in those bra's Pillars, made by the famous Cavalier Bernino, for S. Peter's Sepulcher in the Vatican. Wherefore I here lay before you three several Ways of diminishing the Spaces through the whole Height of the Column.

2. Translatâ in C tertiâ parte altitudinis columnæ ab ejus imo scapo, habeat circinus aperturam CD; ac posito uno ejus crure prius in D, postea in C, fiant duo parvi arcus ad E: sectio illorum arcuum erit centrum arcûs DC, quem oportet dividere in duodecim partes æquales, & ex punctis divisionum ducere parallelas ad basim. Tum spatii inter parallelas divisus in quatuor partes æquales, tres ex illis partibus dabunt longitudinem curvum pro triangulis isoscelibus; vertices autem triangulorum erunt centra singularum spirarum, ut ostendit columna 2.

3. Ductâ ex medio summitatis G rectâ GF, spatium HE transferatur in I, & fiat recta IL parallela ad basim HF; spatium IL transferatur in N, ac fiat NM, & sic deinceps. In parvis columnis triangula sine sensibili errore duci possunt per diagonales: in columnis tamen grandioribus, alterutrum ex modis antea explicatis adhibere necesse est.

1. Make the right Line OA equal to AB the Height of the Column; then draw the Line OB, and on the Center O describe at pleasure the Arch AP, which divide into twelve equal Parts, and by the Divisions draw straight Lines from the Center O to the Line of the Column; and lastly continue the same Parallels to the Base. The Spaces between these Parallels, shall be the Sides of equilateral Triangles, wherewith you are to describe the Wreath of the Column, as is seen in Column 1.

2. Having set the third Part of the Columns Height, from the Bottom of the Shaft to the Point C; with the Interval CD, from the Centers D and C, describe the Parts of Arches intersecting at E. On the Center E, with the same Interval, describe the Arch DC, which divide into twelve equal Parts; and from the Points of those Divisions, draw Parallels to the Base. Then dividing each Space between the Parallels into four equal Parts; three of those Parts shall be the Sides of the *Isosceles* Triangle; whose Vertex is the Center whereon to describe each Wreath of Column 2.

3. Having drawn from the midst of the Columns top G, the Line GF, make HI equal to HF, and draw IL parallel to the Base HF: Again, make IN equal to IL, and draw NM also parallel, and so on. In small Pillars, the Centers of the Diagonals of these Spaces may, without sensible Error, serve for describing the Wreaths; but in greater Columns, either of the other two Methods is rather to be chosen.

FIGURA Quinquagesimaquarta.

Vestigia ædificii Ordinis Corinthii.



ESCRIP^TURI ædificium Corinthium octangulare, ponimus hic vestigia unius ex quatuor partibus pilarum, quibus imponetur fornix in modum tholi, ut constabit in figurâ quinquagesimoctava. Ad faciliorem descriptionem, in parte inferiori paginae posui vestigium geometricum stylobatæ, in superiori vestigium geometricum coronicis, cum latitudinibus & longitudinibus membrorum singulorum; ut eas transferendo in lineam plani more consueto, utrumque vestigium opticè deformetur. Ad vitandam confusionem, prius notare oportebit puncta quæ spectant ad membra propinquiora solido parieti, deinde alia.

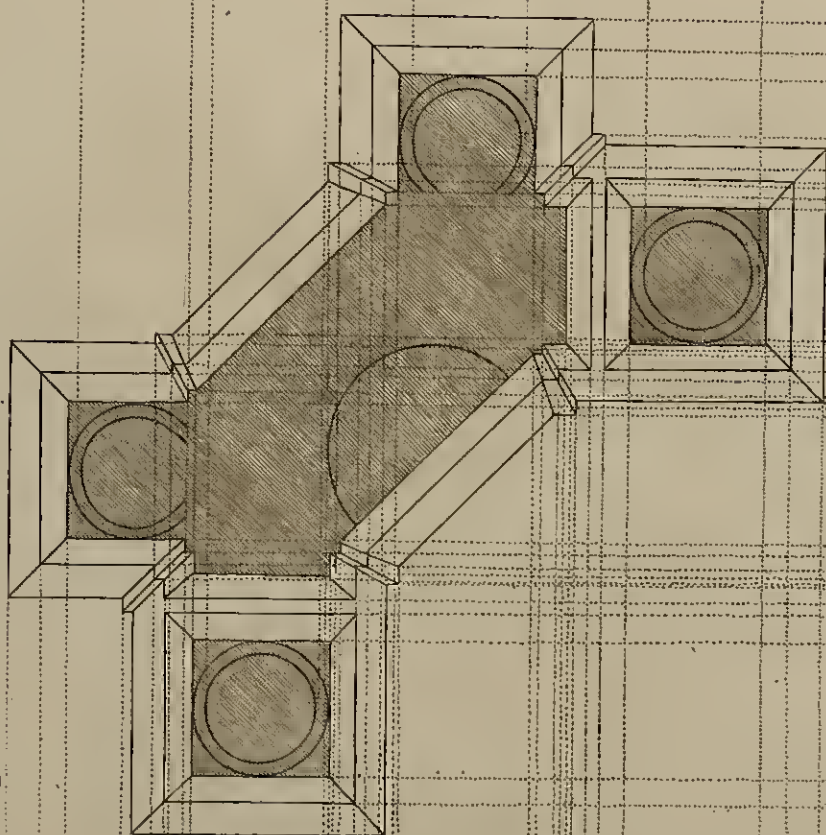
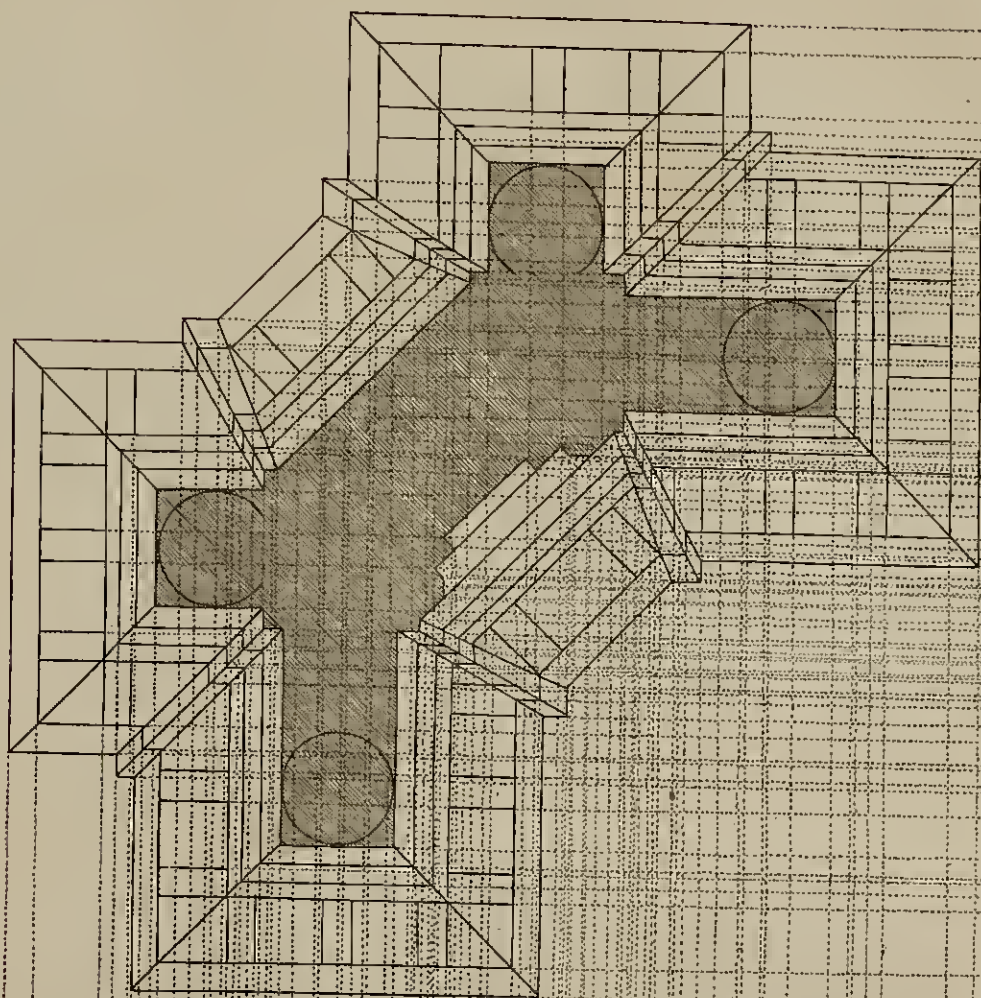
The Fifty-fourth FIGURE.

The Plan of a Design of the Corinthian Order.



BEING to describe an Octangular Corinthian Work, I have here inserted the Plan of one Quarter of the Composition; which is vaulted in Form of a Cupola, as is seen in the Fifty-eighth Figure. To render the Plan less confus'd, I have, in the lower part of the Plate, given the Geometrical Plan of the Pedestal; and in the upper part, that of the Cornice; with the Breadths and Lengths of each Member: so that by transferring the same into the Ground-line, after the usual Manner; you delineate each Plan in Perspective. For avoiding Confusion, 't will be requisite first, to transfer the Points of those Members that are next the Solidity of the Wall; and then proceed to the others.

FIG. LIV.



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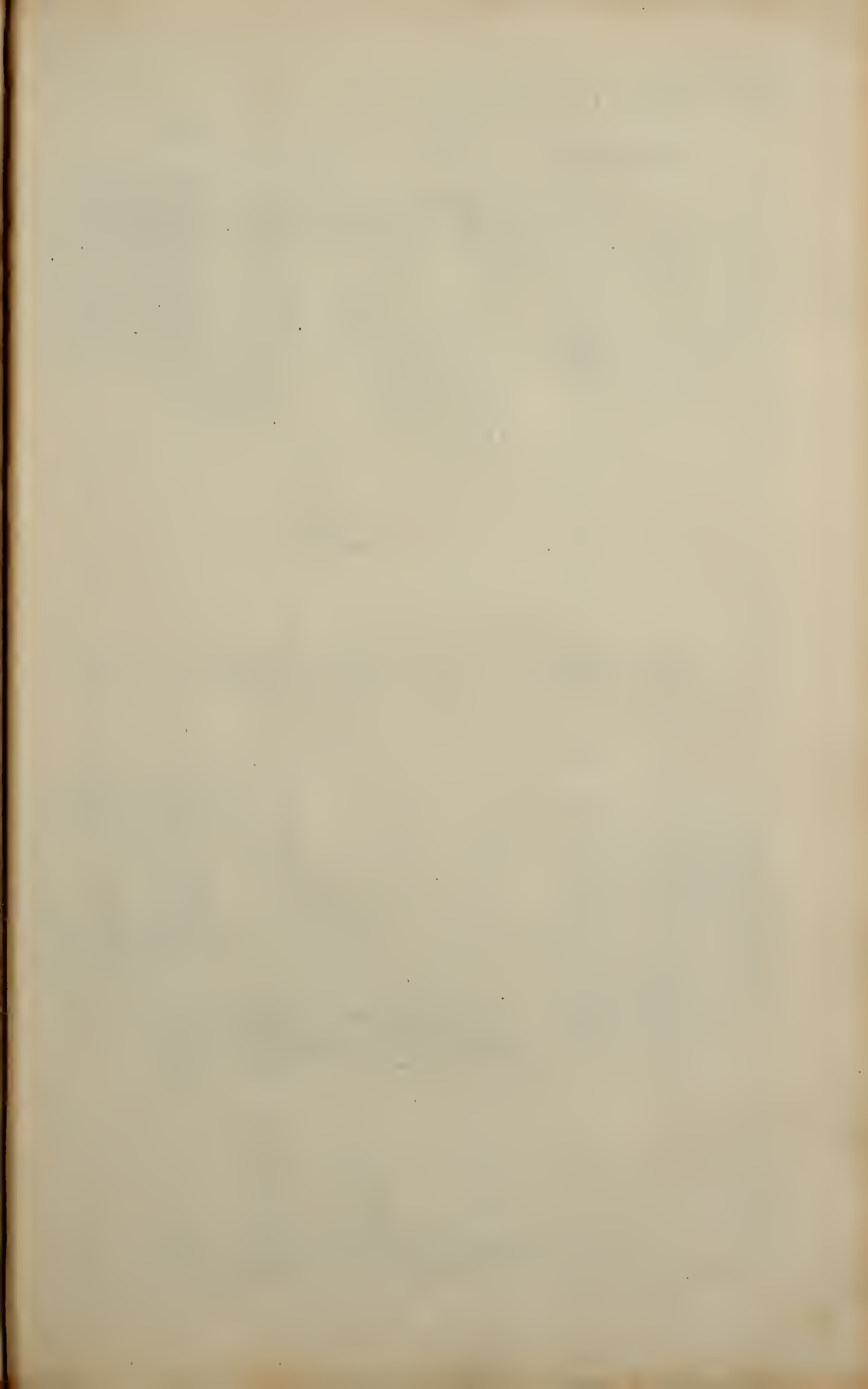


FIG. LV.

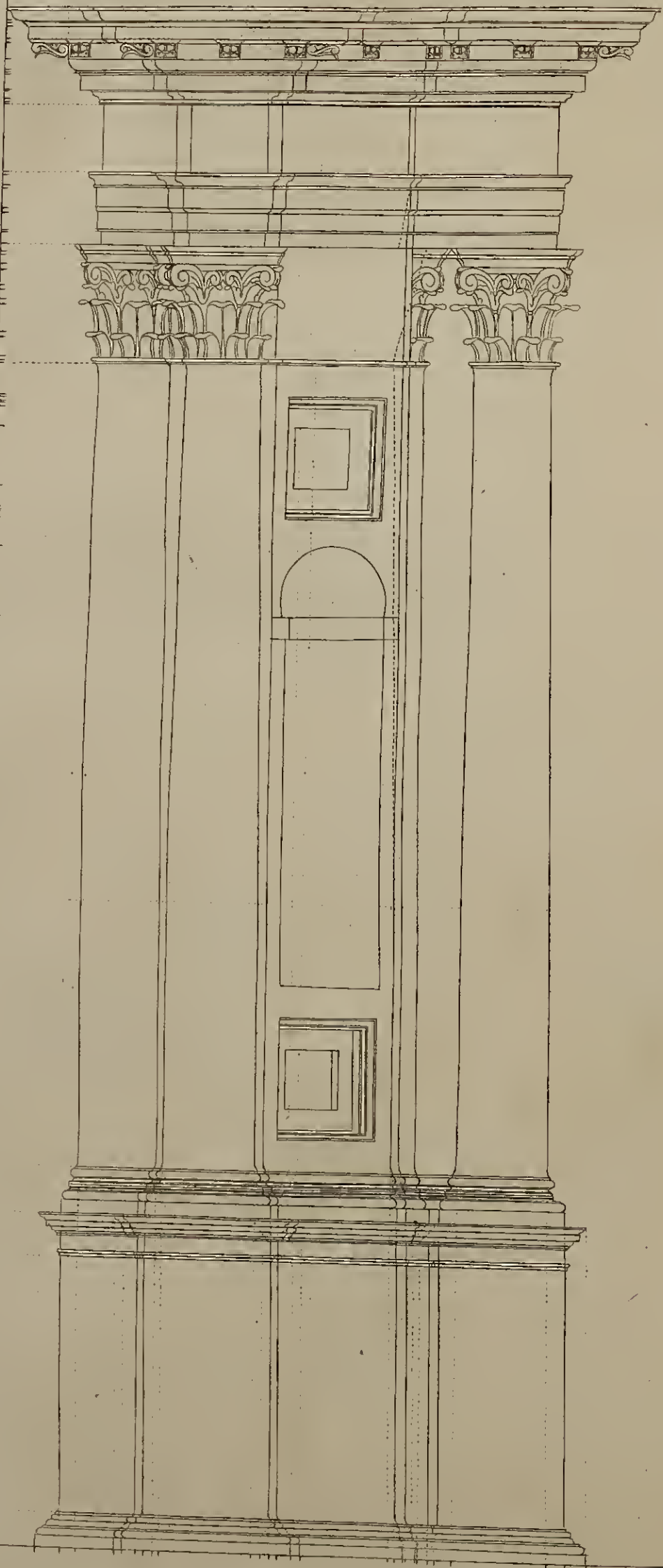


FIGURA Quinquagesimaquinta.

Elevatio ædificii Ordinis Corinthii.



LEVATIO geometrica ædificii octangularis congruit cum duobus ejus vestigiis figuræ antecedentis. Quia verò elevatio parietis abscondit secundam ex quatuor columnis, eademque in ædificio deformato conspicua futura est; iccirco eam lineis occultis designare oportuit.

The Fifty-fifth FIGURE.

The Geometrical Elevation of a Corinthian Work.



THE Geometrical Elevation of this Octangular Design, is wholly correspondent to the two Plans of the foregoing Figure: But because the Wall in this Upright takes off the Sight from the second of the four Columns, which is notwithstanding visible in the finish'd Perspective that follows; 'tis requisite to delineate the same with occult Lines, as in the Figure.

FIGURA Quinquagesimafexta.

Deformatio vestigiorum & elevationis ædificii
Corinthii.



N hac figurâ, lineam plani coincidere volui cum linea horizontis. Itaque videri non posset vestigium inferius, nisi ut alias deorsum protraxi lineam plani, hic è converso sursum promovissem lineam horizontis, quam constitui mediam inter lineas plani utriusque vestigii, ut ambæ projectiones essent æquè distinctæ. In elevatione, columna secunda, quam, ut dixi, paries abscondit, lineis occultis designanda est.

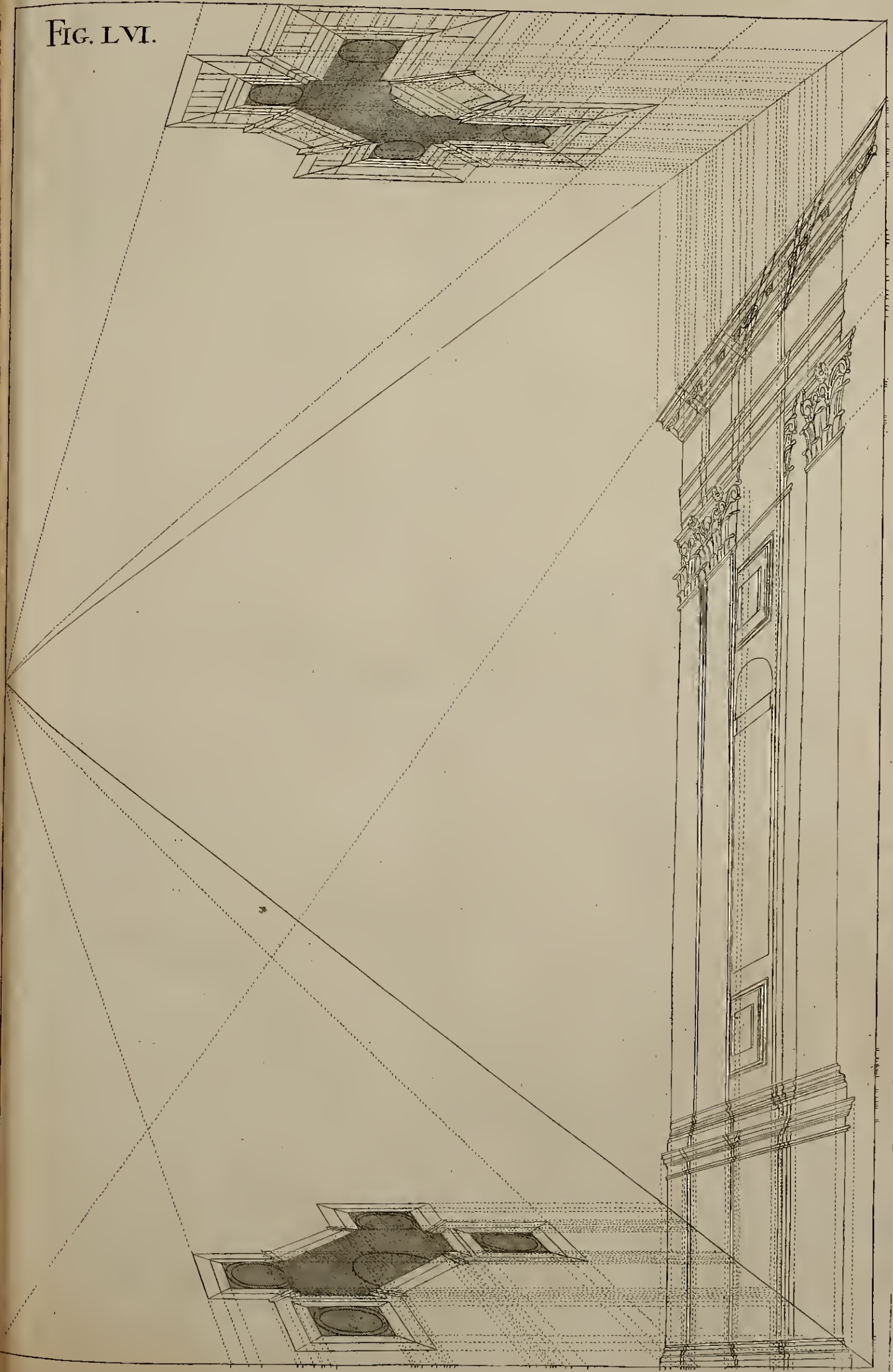
The Fifty-sixth FIGURE.

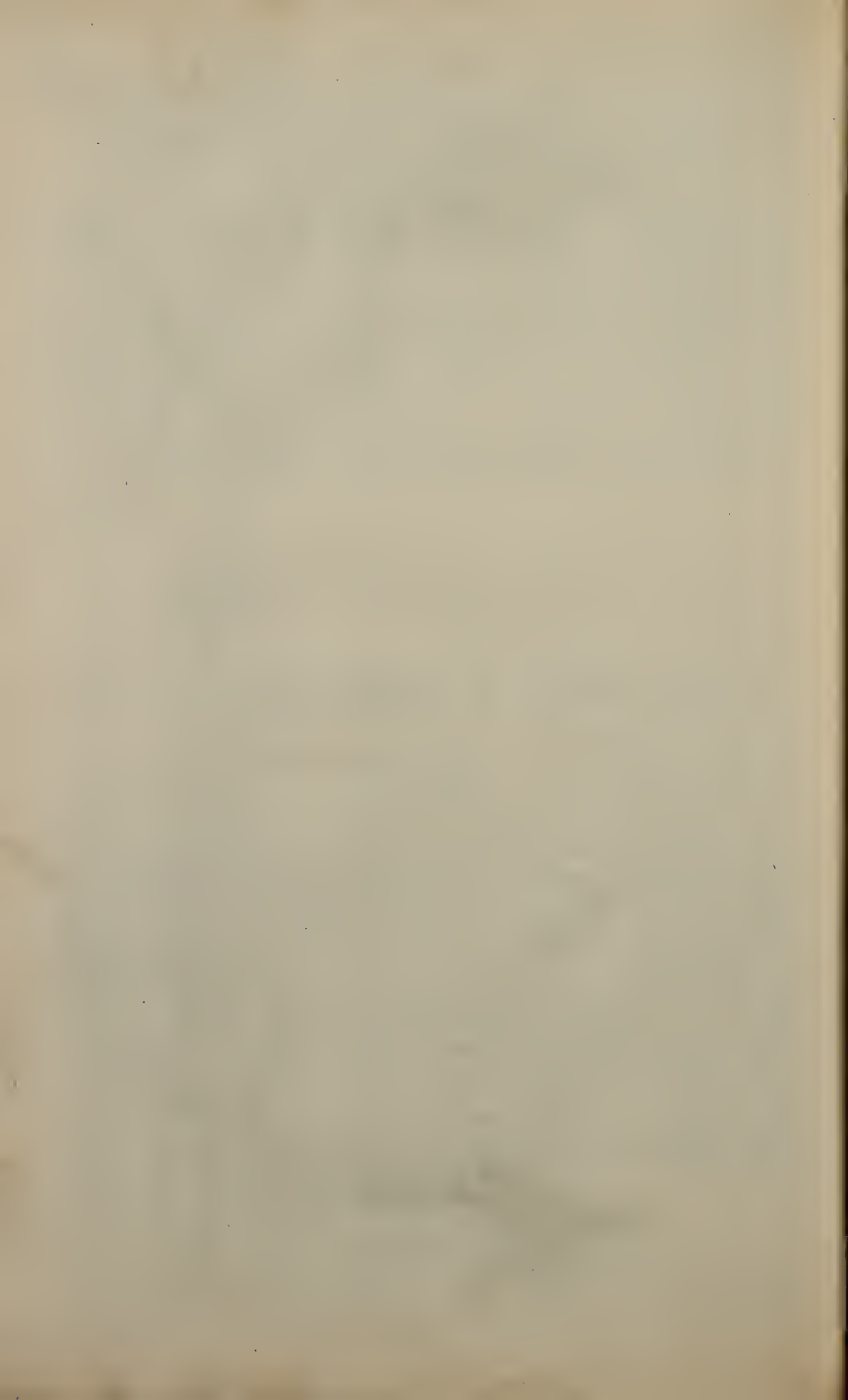
The Perspective Plans and Upright of the Corinthian Design foregoing.



N this Figure, I have made the Ground-line coincident with that of the Horizon, in which case the lower Plan can't be seen, unless the Ground-line be sunk lower, as before intimated; or contrariwise, the Point of Sight rais'd higher, as I have here done, keeping it in the midst between the Ground-lines of the two Plans, that the Perspective of both might be equally distinct. In the Elevation, the second Column, which I mention'd to be hidden by the Wall, should be design'd with occult Lines.

FIG. LVI.





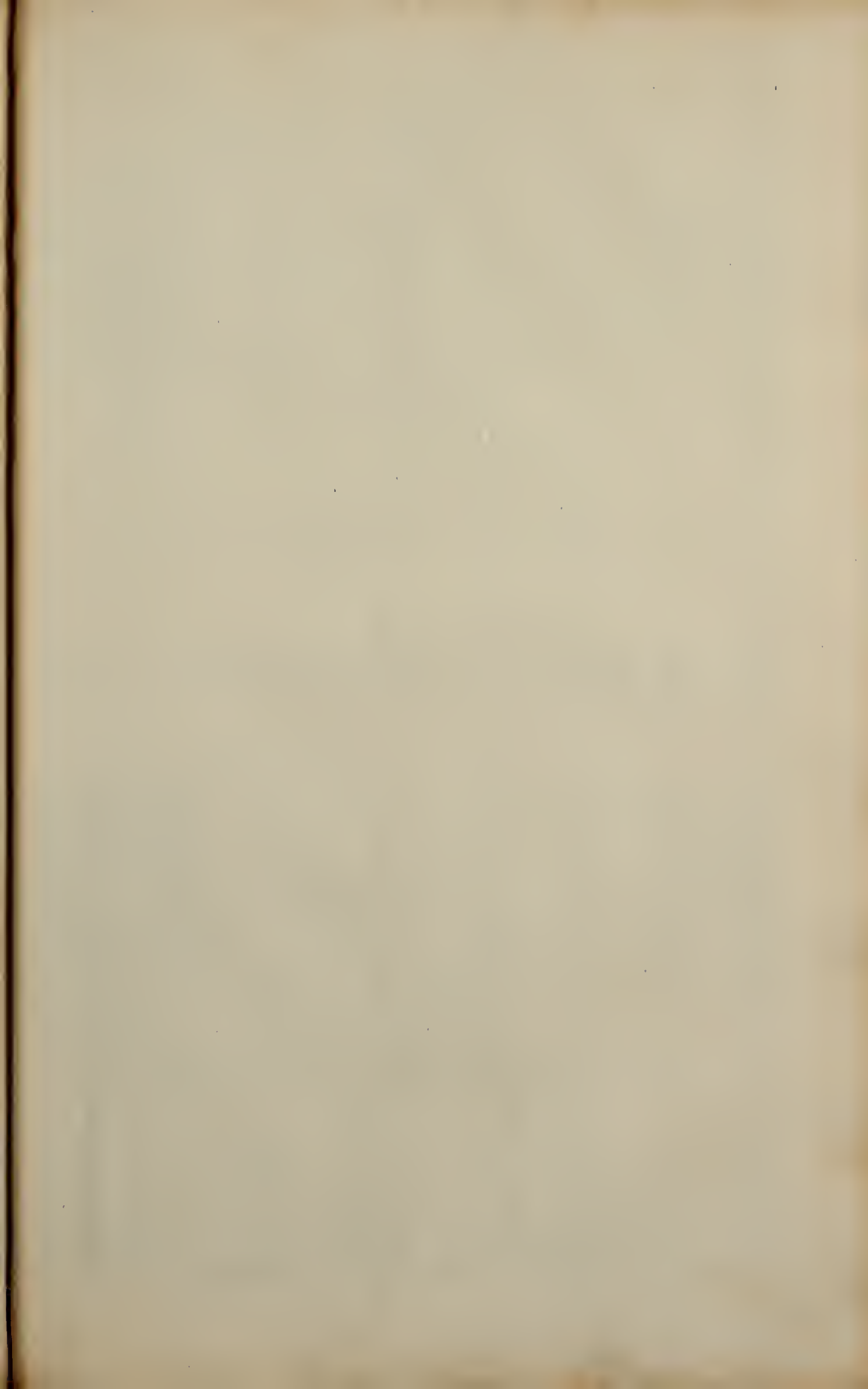


FIG. LVII.

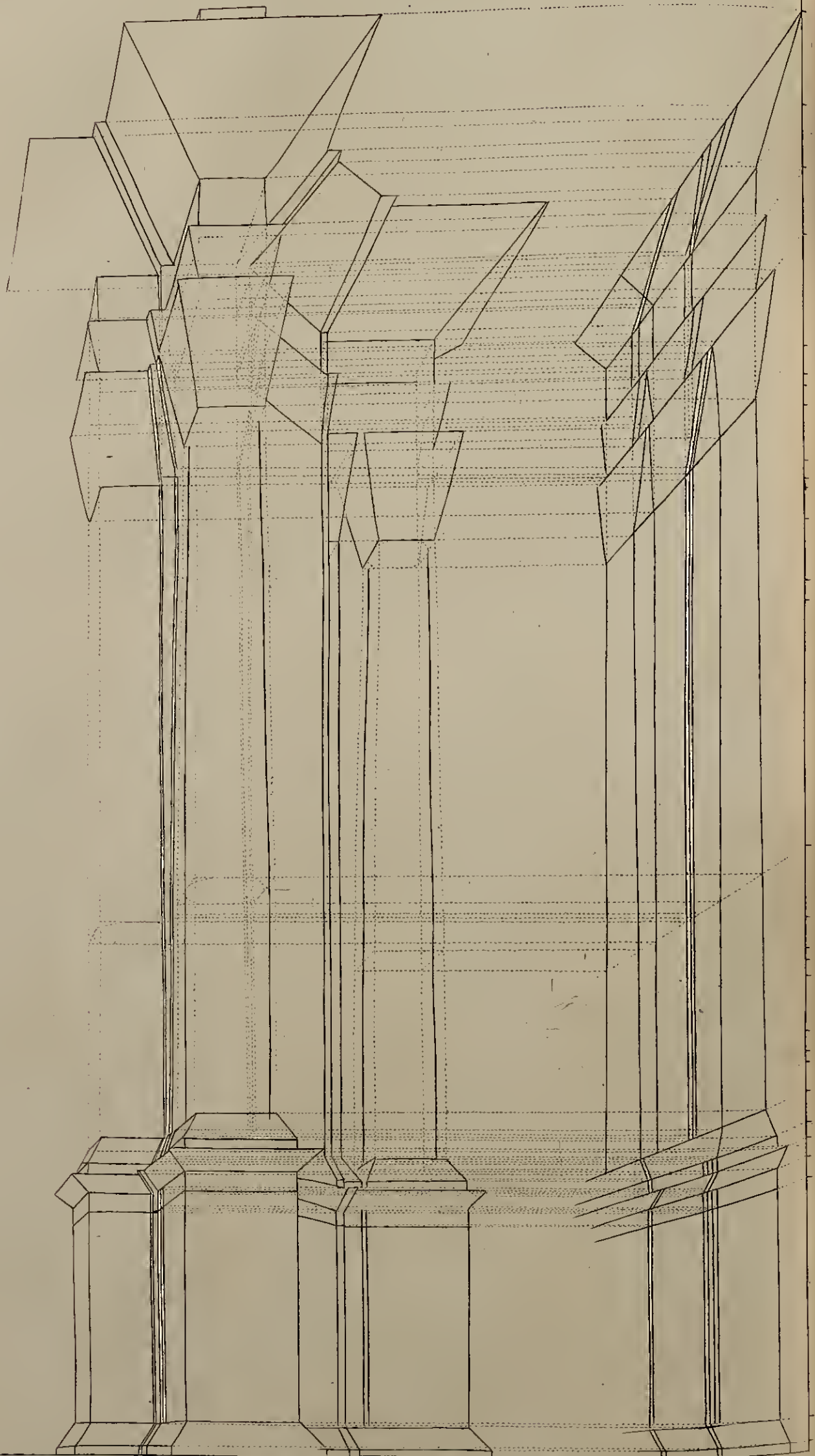


FIGURA Quinquagesima septima.

Adumbratio figuræ sequentis.



FIGURAM hanc seorsim delineavi, ut videas quomodo facienda sit operis totius adumbratio, accipiendo altitudines membrorum singulorum ex elevatione; latitudines & longitudines ex vestigiis. Quæ omnia ex diagrammatis inspectione clarissimè apparent.

The Fifty-seventh FIGURE.

The rough Draught of the following Figure.



Have drawn this Figure apart, that you may see the Manner of describing the Out-line of the whole Work, by taking the Heights of the several Members from the Elevation, and their Breadths and Lengths from the Plans; all which is very plain, upon Inspection of the Figure.

FIGURA Quinquagesimoctava.

Ædificium Ordinis Corinthii octangulare.



UCUSQUE descripsimus pilas anticas sinistras
ædificii Corinthii. En hoc loco medietatem
dexteram totius Operis. Integrum verò ædi-
ficiū habebis figurâ sexagesimâ.

The Fifty-eighth FIGURE.

Part of an Octangular Work of the Corinthian Order.



ITHERTO the nearest left-hand Quar-
ter of this *Corinthian* Design has been de-
scrib'd. In this Plate you have the right-
hand Half of the whole Work ; and in the
Sixtieth Figure, the entire Perspective
compleat.

FIG. LVIII.





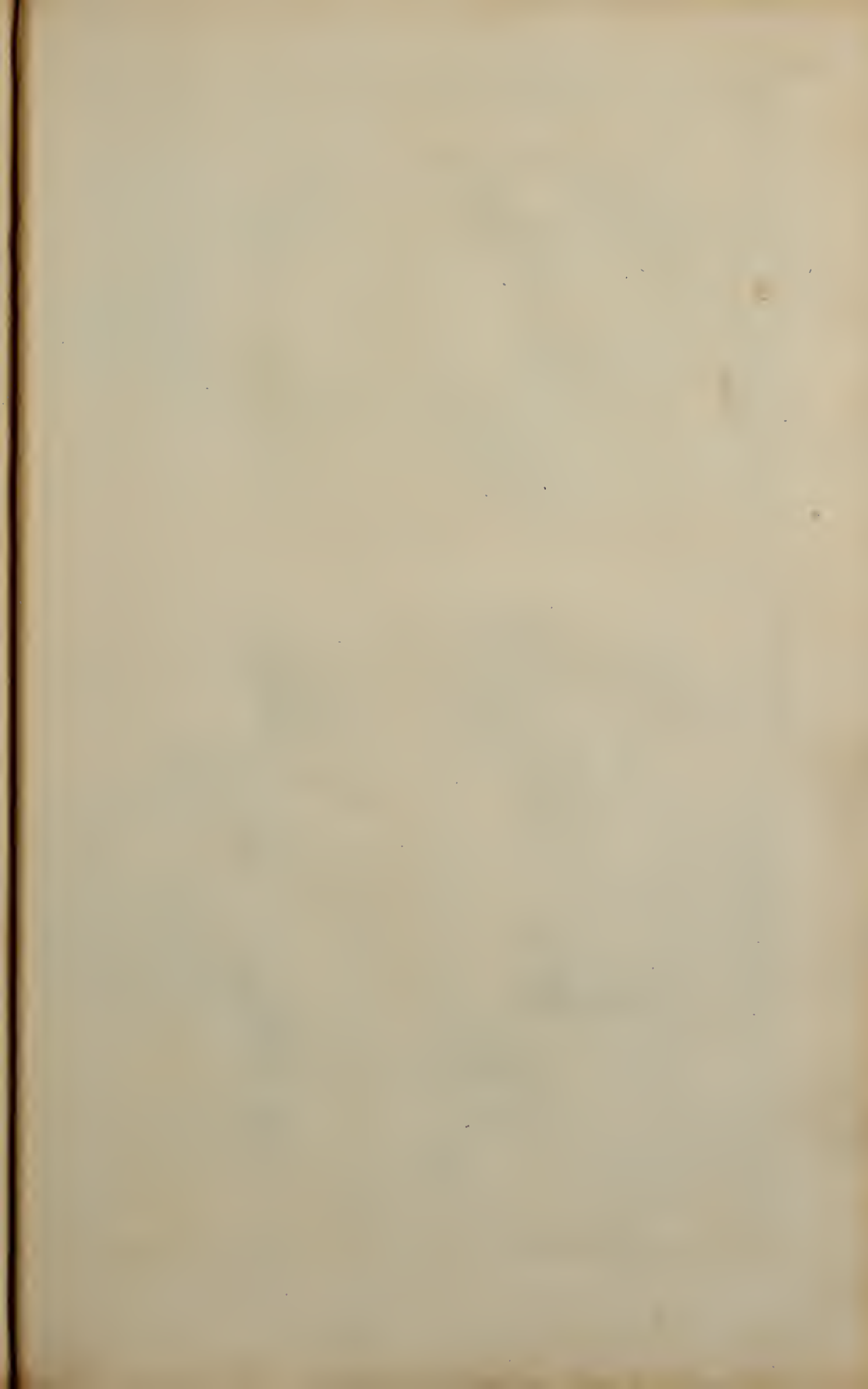


FIG. LIX.

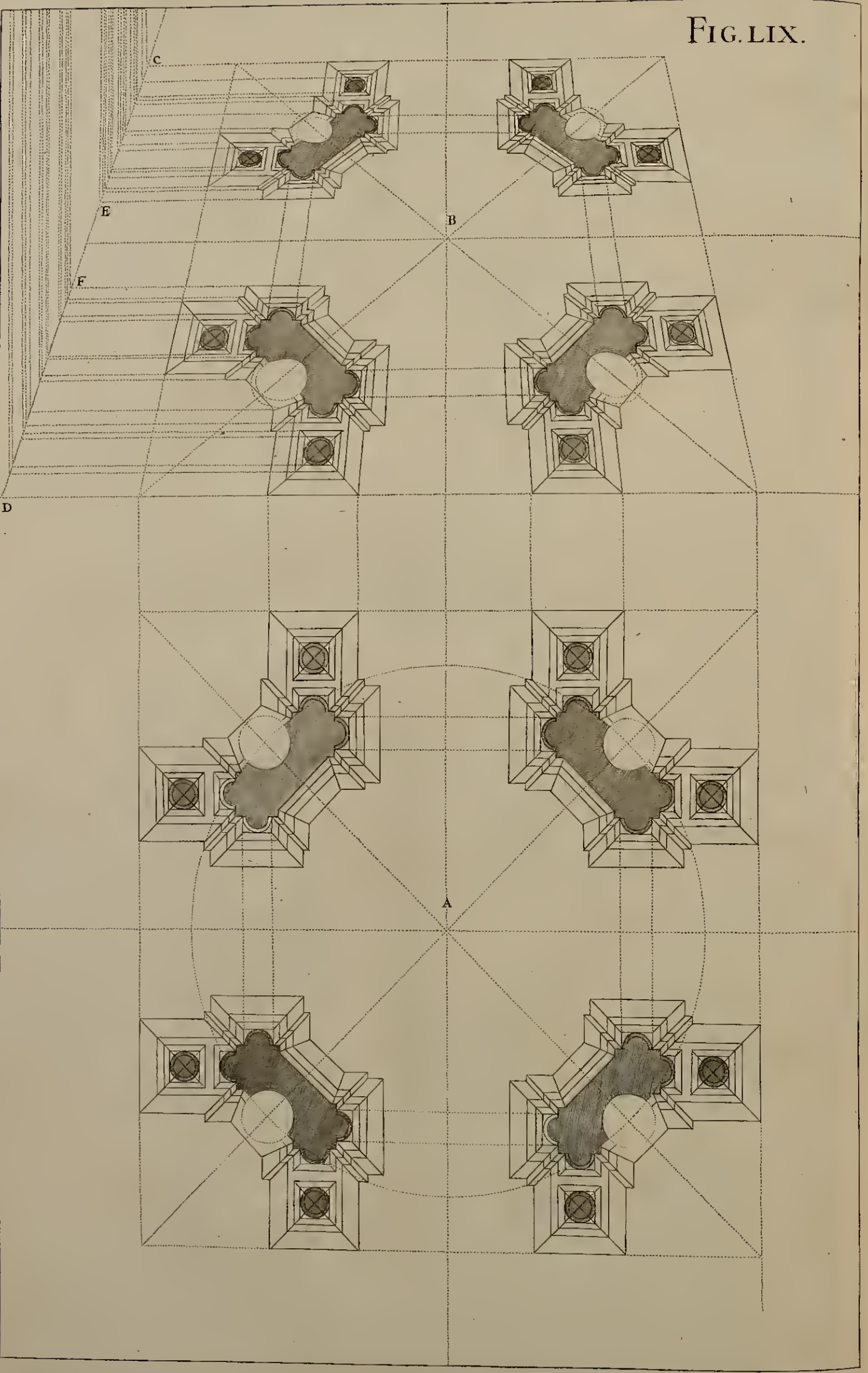


FIGURA Quinquagesimanona.

Vestigia tabernaculi octangularis.



PROFECTIONES rerum octangularem sunt quadratis difficiliore: ideo in eis explicandis diligentia non pepercit. Moles cujus vestigia vides in A & B, convenit in multis cum ea quam ereximus figurâ quinquagesimo octavâ. Visualis CD recipit sectiones perpendicularium, quæ deserviunt pro elevatione figuræ sequentis, ut sæpius dictum est. Si facies interior delineanda sit seorsim à facie anteriori, illam perficies ope linearum CE, istam ope linearum FD.

The Fifty-ninth FIGURE.

The Plans of an Octangular Tabernacle.



OCTANGULAR Figures being more difficult to be put in Perspective, than the Square; I shall use my best Endeavours to render the Method as plain as possible. The Composition whose Plans you see in A and B, has much Affinity with that describ'd in the Fifty-eighth Figure. The Visual CD receives the Sections, from which Perpendiculars are rais'd for the Elevation and Profile of the following Figure, as has been often said. If you would delineate the Back-part separate from the Fore-part, you may do the former by means of the Line CE, and the latter by that of FD.

FIGURA SEXAGESIMA.

Tabernaculum octangulare.



OC tabernaculo aliquoties usus fui pro expositione quadraginta horarum. Si colores scitè inducti fuerint in duos ordines telariorum, reserctis omnibus quæ ad molem ipsam non pertinent, spectatoribus imponet, & solida videbitur. Oportebit autem exemplar externæ faciei eruere ex parte DF vestigii & elevationis; exemplar interioris faciei eruere ex parte EC, servando in omnibus regulas quas hucusque tradidimus.

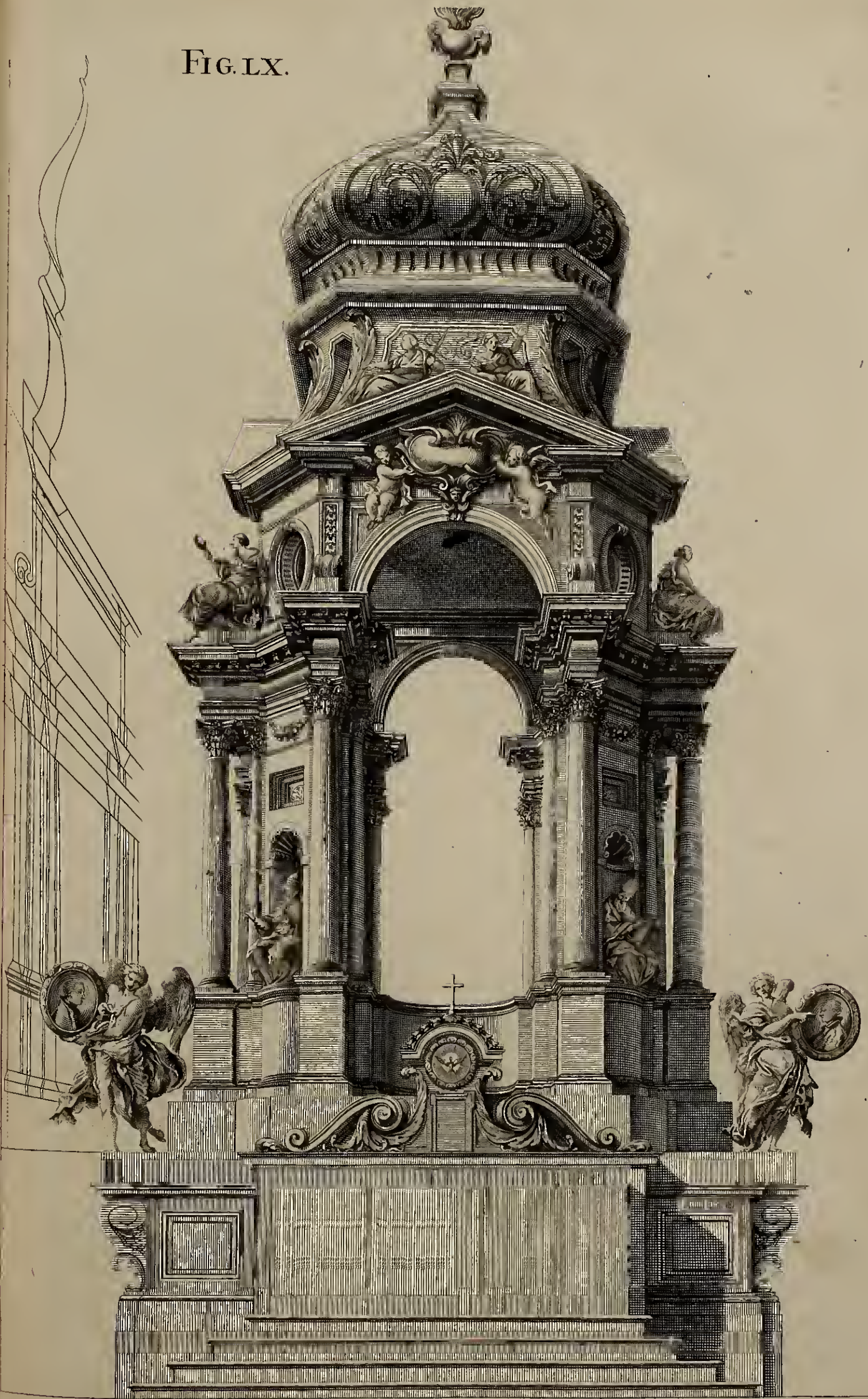
The SIXTIETH FIGURE.

An Octangular Tabernacle in Perspective.



Have sometimes made use of this Tabernacle for the Exposition of the *Forty Hours*. If the Colours are laid by a skilful Hand, on two Ranges of Cloth, and the Frame cut away according to the Out-line of the Work, they will wonderfully deceive the Eye, and appear as solid; but then the outer Range must be drawn after the Plan and Elevation of the Part DF in the foregoing Figure; and the inner Range after that of EC; in all things observing the Rules hitherto deliver'd.

FIG. LX.





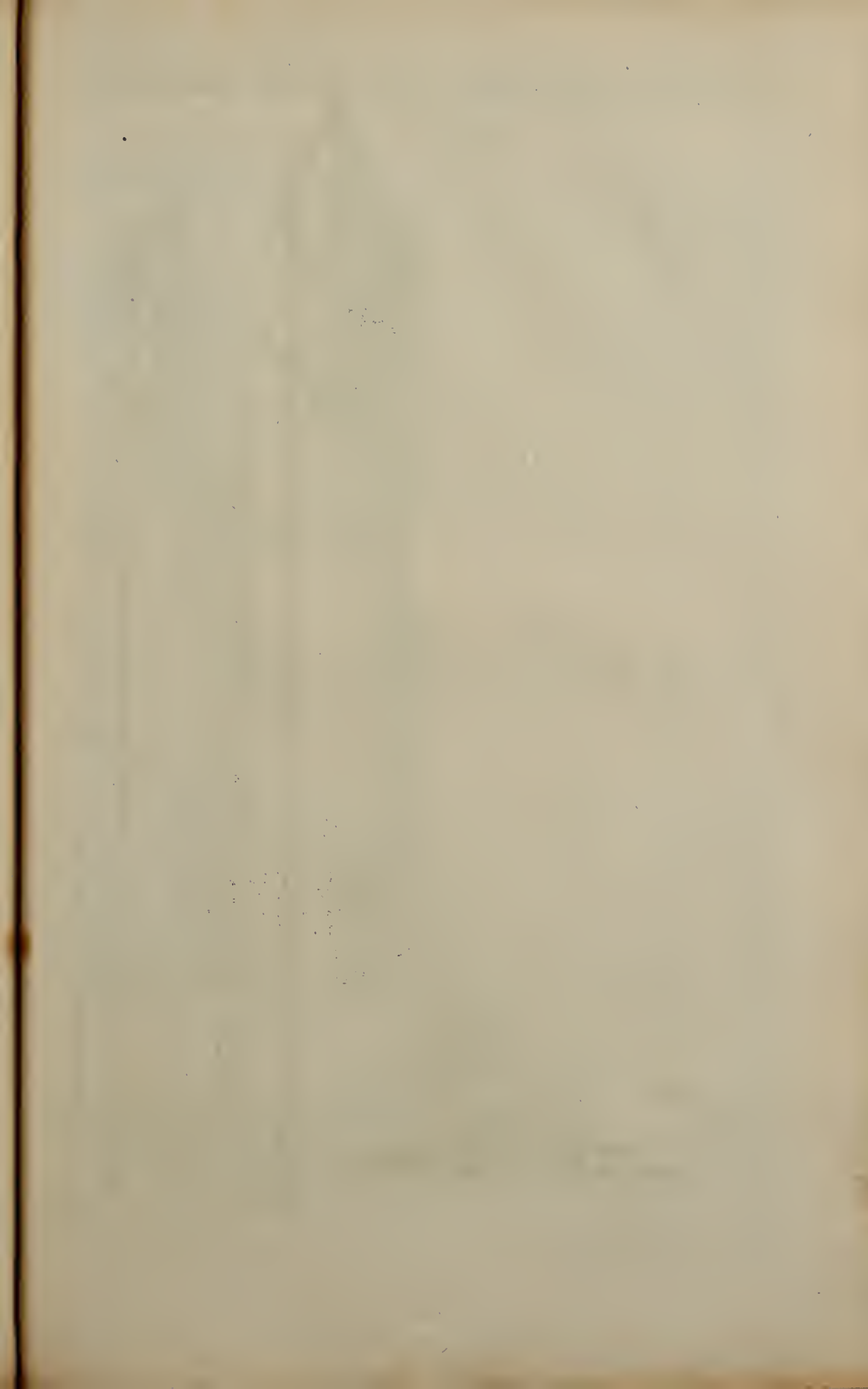


FIG. LXI.

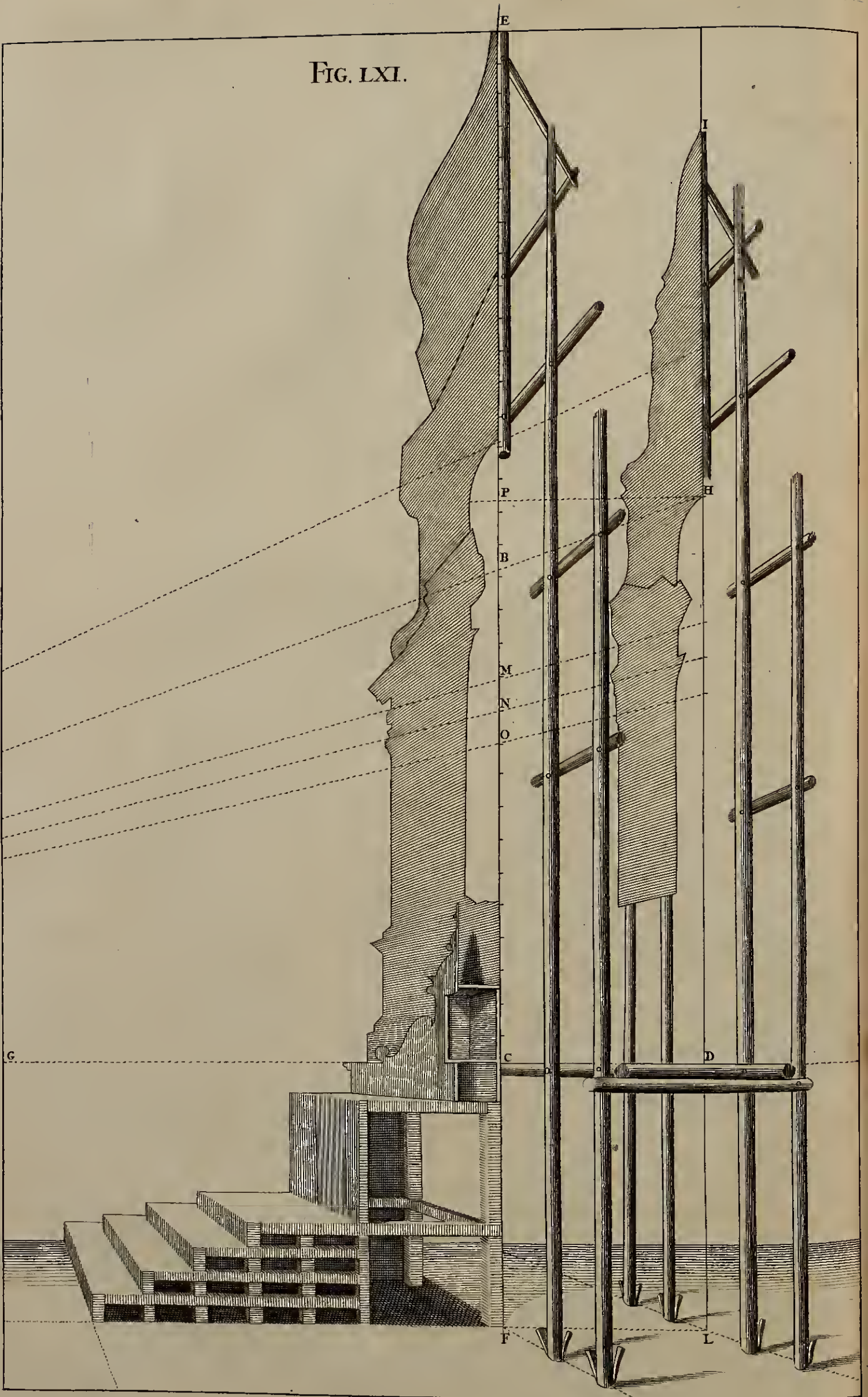


FIGURA Sexagesima prima.

Modus erigendi machinas, quæ constant pluribus ordinibus telariorum.



X figura inspectione addisces modum erigendi machinas quæ constant pluribus ordinibus telariorum. Tabernaculum hoc nostrum indiget duobus tantum ordinibus; nam telaria propinquiora oculo exprimunt faciem externam, remotiora exhibent faciem internam. Ne autem lateant stipites quibus telaria sustentantur, medietatem telariorum adumbrare omisimus. Recta LS est linea plani, recta DG est linea horizontalis; ac punctum distantiae quod cadit extra paginam in recta CG prolongatâ, debet esse remotum à puncto C, quantum in superiori parte figurae quinquagesimæ nonæ, punctum distantiae est remotum à puncto oculi. Eadem horizontalis DG secatur normaliter in C à recta EF, quæ est sectio externæ faciei tabernaculi, & ex C incipiunt divisiones in partes æquales pro reticulatione anterioris faciei telariorum, ut dicemus figurâ sexagesimæ secundæ. Recta IL quæ est sectio internæ faciei tabernaculi, distat ad libitum à recta EF cui est parallela. Porro, per divisiones rectæ EF (ut vides in M, N, O) ex puncto distantiae ducenda sunt visuales ad rectam IL pro reticulatione aliorum telariorum: distantia enim DC facit ut augere oporteat ea quæ in telariis pinguntur, alioquin justo minora viderentur. Atque hinc dignosces, cur arcus qui in telariis anterioribus pertingeret solum ad B, in posterioribus elevetur usque ad H.

Figura sequenti proponemus modum delineandi faciem internam telariorum, adhibita reticulatione externæ faciei: ad intelligentiam verò illius methodi, fiat in hac figurâ recta HP parallela ad DC, ac recta BC dividatur in totidem partes æquales, in quot partes divisa fuerit recta PC.

The Sixty-first FIGURE.

The Manner of erecting Machines, that consist of several Ranges of Frames.



Y casting your Eye on the Figure, you'll readily apprehend the Manner of erecting the several Ranges of Frames. This Tabernacle last describ'd needs only two of them; the Frame next the Eye represents the outer Face, and the hinder Frame the inner Face thereof. I have here describ'd but the Half-Breadth of the said Frames, that you might have a Sight of the Poles and Braces which support them. The Line LS is the Line of the Plan, or Ground-line; the Line DG is that of the Horizon; and the Point of Distance, which falls without the Page CG prolong'd, is as far from the Point C, as the Point of Distance is from the Point of Sight in the upper Part of the Fifty-ninth Figure. The Horizontal DG is cut perpendicularly in C by the Line EF, which is the Section of the outer Face of the Tabernacle; and from the Point C begin the equal Divisions for the Net-work of the foremost Frame, as is shewn in the Sixty-second Figure. The Line IL, which is the Section of the inner Face of the Tabernacle, may at pleasure be set nearer or farther from the Line EF, to which it is parallel. By the Divisions of the Line EF (as M, N, O) Lines are drawn from the Point of Distance to the Perpendicular IL, for the Net-work of that Frame; for the Distance DC obliges the Parts of D to be painted larger, otherwise they will appear less than they really ought. And from hence you may discern, why the Arch, which in the foremost Frame would reach only to B, does in the hindmost rise up to H.

In the following Figure is shewn the Manner of delineating the inner Frame, from the Net-work of the outer Face; for the better understanding of which, make the Line HP in this Figure parallel to DC, and let the Line BC be divided into as many equal Parts, as the Line PC was.

FIGURA Sexagesima secunda.

De reticulandis telariis, quæ repræsentent ædificia solida.



UO exemplaria tabernaculi quæ seorsim delineanda sunt, conjunctim habes in A. Utrisque deservit eadem reticulatio, quam suis numeris insignivimus. Postquam ergo designaveris amplitudinem totius ædificii, cum proportione ad ipsam reticulabis pavementum B aule cujusvis quod capiat rem totam, ascriptis eisdem numeris quos habet exemplar: ejusque retis ope, ducentur in pavimento linea terminativa totidem membrorum, quot futura sunt telaria experimentia faciem externam tabernaculi. Ubi hæc parata fuerint, singula disponentur exactè suis locis in ipsomet pavimento; ac funiculis colore nigro imbutis, repetetur in telariis eadem reticulatio, additis ad libitum pluribus visualibus; quarum adjumento dum seorsim pinguntur telaria, duci queant rectæ tendentes ad punctum oculi seu perspectiva. Alia quoque reticulatio super pavimento necessaria est pro internâ facie tabernaculi: ac duæ reticulationes pavementi eam inter se proportionem habebunt, quam habent divisiones rectarum IL, EF, figura sexagesima prima. Hujus retis ductu fient linea terminativa telariorum cum reliquis, ut jam indicavimus.

Juxta hanc methodum nequeunt duci linea terminativa interioris faciei, nisi fiat in pavimento aliud rete deleta priori, quod esset valdè laboriosum. Postquam ergo ex vestigio figura quinquagesimanona cruta sint duo exemplaria, in exemplar faciei externa transferatur recta PC figura sexagesima prima, in exemplar faciei interna transferatur recta BC. Si autem recta PC divisa fuerit in quindecim partes aequales, dividetur BC in quindecim partes aequales, atque ope harum divisionum reticulare oportebit utrumque exemplar. Porro licet quadrata in reti exemplaris faciei externa sint majora quadratis exemplaris interne faciei, nihilominus idem rete pavementi deserviet pro ducendis lineis terminativis utriusque faciei. Quæ dicta sunt de duobus exemplaribus, valent de aliis quocumque. Exempli gratiâ; si construere placeat quinque ordines telariorum, fient quinque exemplaria in papyro. Si in omnibus exemplaribus usurpetur eadem reticulatio, in pavimento facere oportet quinque diversas reticulationes. Si autem in exemplaribus fiant quinque diverse reticulationes, in pavimento sufficit una reticulatio.

Curandum est ut singula retis quadrata in telariis sint exacta, omnesque illorum anguli sint recti. Modus expeditissimus faciendi angulos rectos est hujusmodi. Posito uno crure circini in puncto F linea recta EF, alioque crure posito ubilibet in O, fiet circulus GFI, & ex puncto G diameter GI. Si recta HF transeat per puncta I & F, est normalis ad EF.

The Sixty-second FIGURE.

Of making the Net-work on Frames, for representing the Architecture as solid.

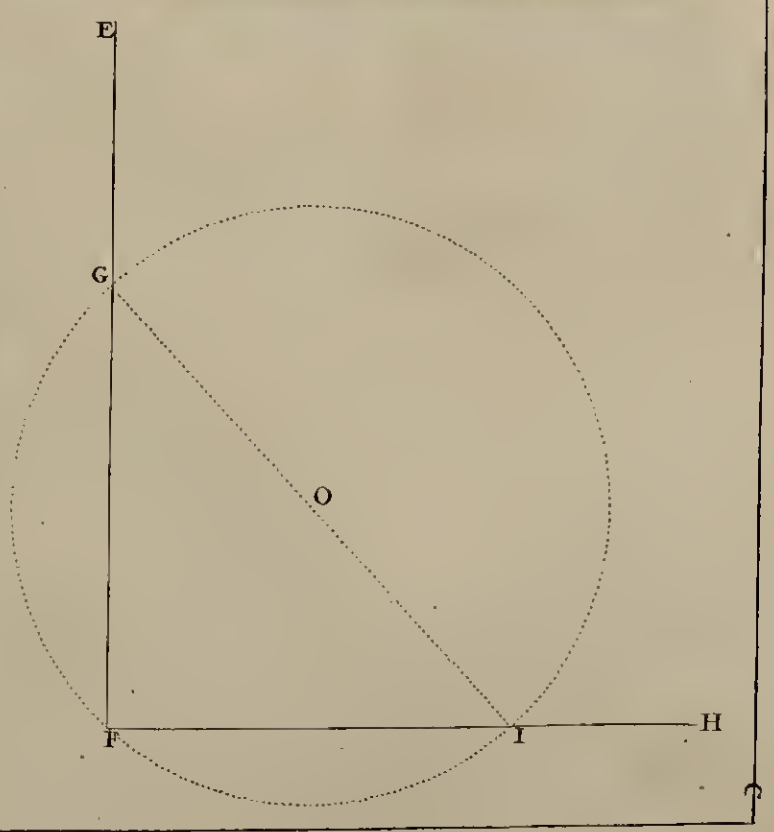
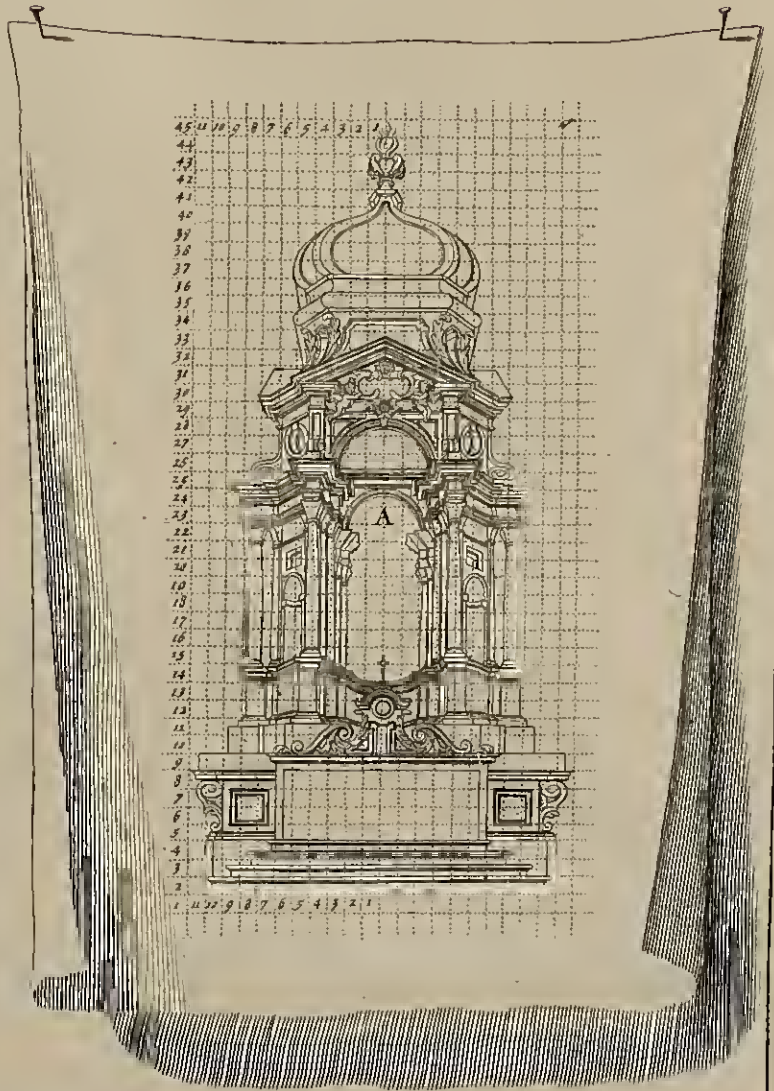
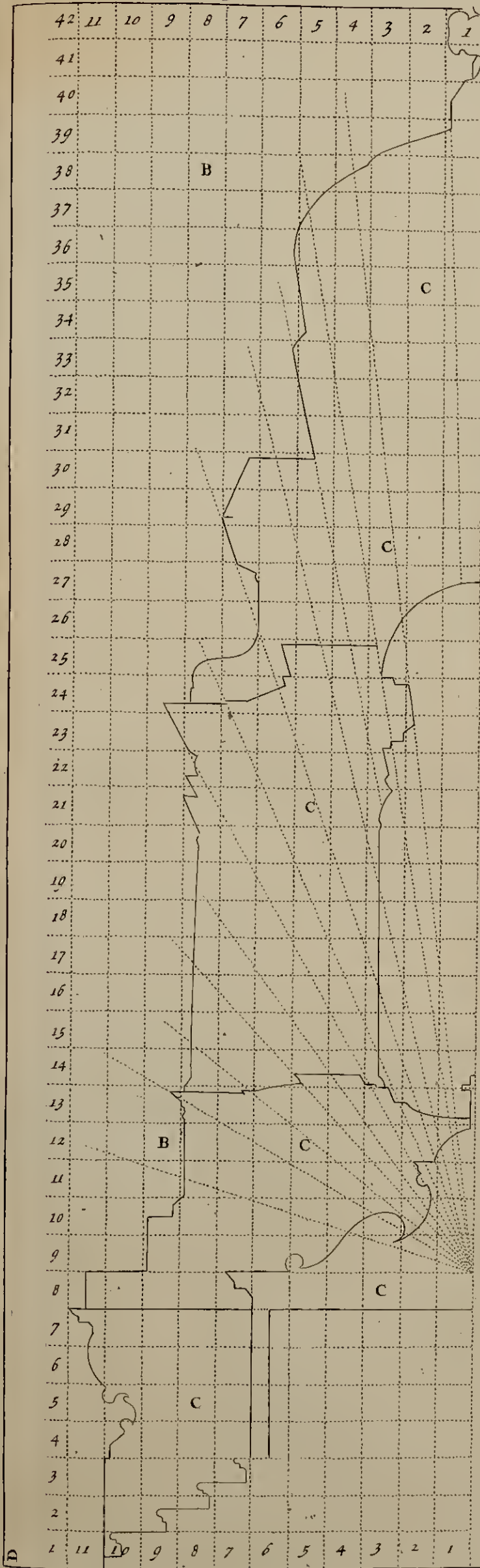


YOU have jointly in A, the two Designs of a Tabernacle, which are to be drawn separately; the same Net-work serving for both, which is also mark'd with Numbers. When you have therefore resolv'd on the Size of your Work, on the Pavement of some Room capacious enough make a Net-work answerable, and affix thereto the Numbers, as in your Copy: By the Help of which, you may on the Pavement describe the Out-line of all those Members that are requisite to the outer Frame of the Tabernacle. This being done, let the Frame be laid exactly in its place on the said Pavement, and with a black Line strike thereon the same Net-work; adding as many visual Lines as you please, which will be of Use for drawing Lines to the Point of Sight, when you come to paint the Frames asunder. Another Net-work on the Pavement is also necessary for the inner Face of the Tabernacle, which should bear such Proportion to this, as the Divisions of the Line IL do to those of EF in the Sixty-first Figure; and by this means the Out-lines of the inner Frame, &c. may be drawn, as has been shewn already.

Thus the Out-line of the inner Face can't be describ'd, without rubbing out the first Net-work, and making a second on the Pavement; which would be very troublesome. Wherefore, from the Plan of the Fifty-ninth Figure, take the two Designs, and transfer the Line PC of the Sixty-first Figure on the outer Face, and the Line BC on the inner Face. Then if PC were divided into fifteen equal Parts, BC shall be divided in the same manner, and by these Divisions make the Net-work on each Design. And although the Squares of the outer Face be larger than those of the inner one, the same Net-work may nevertheless serve for giving the Out-line of both. What has been said of these two Designs, may be understood of many. For Instance; if five Ranges of Frames were requir'd, five Designs must be made in Paper. If in all the Designs the same Net-work be us'd; then five several Net-works must be made on the Pavement; but if the Designs have five different, then one Net-work on the Pavement will suffice.

You must be very careful that all the Squares of the Net-work be exactly divided, and at right Angles. The ready way of making a right Angle is thus: Placing one Foot of the Compasses in the Point F of the Line EF, and the other at pleasure in O, describe the Circle GFI; and from the Point G draw the Diameter GI. The Line FH drawn by the Points FI, shall be perpendicular to FE.

FIG. LXII.



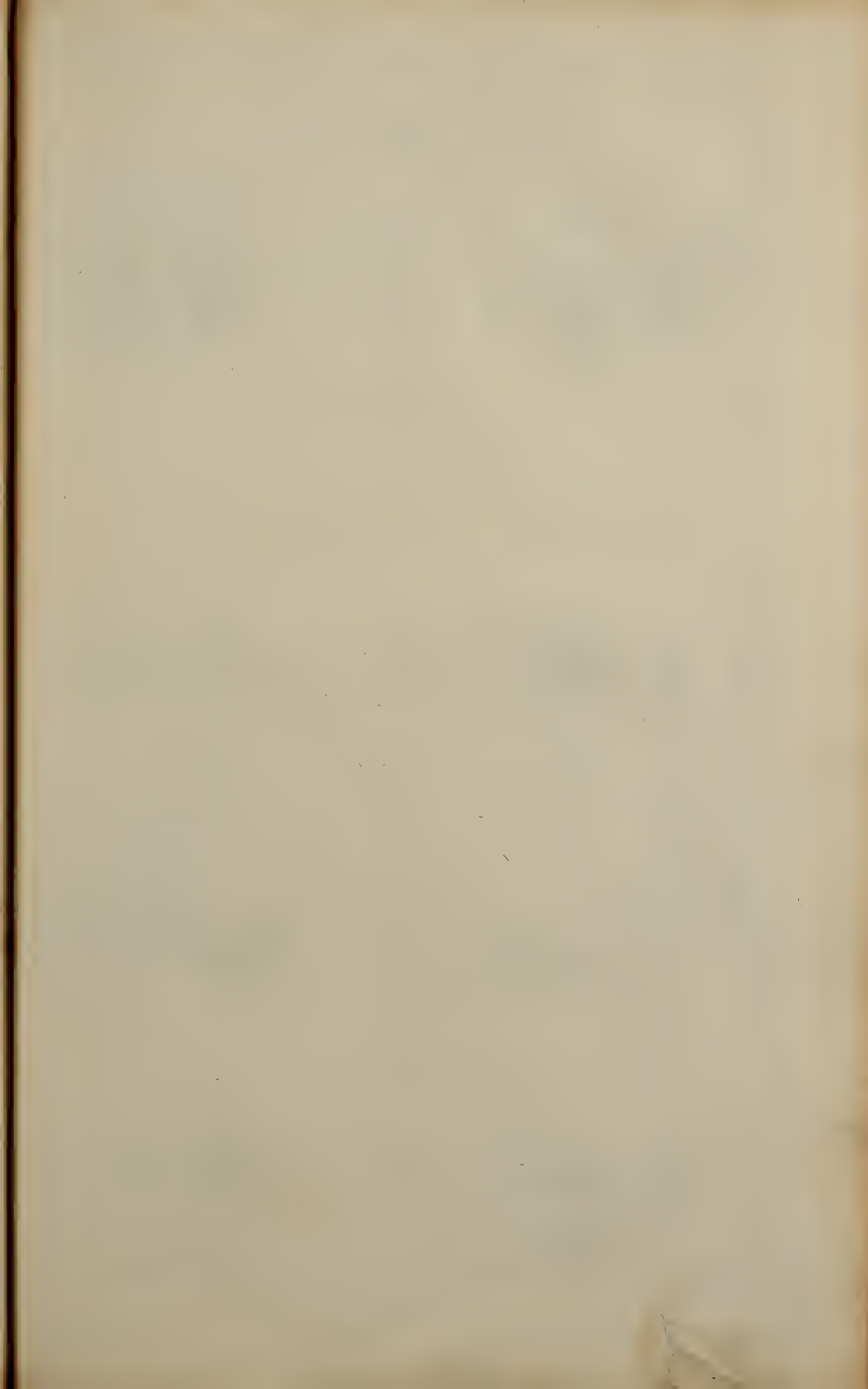


FIG. LXIII.

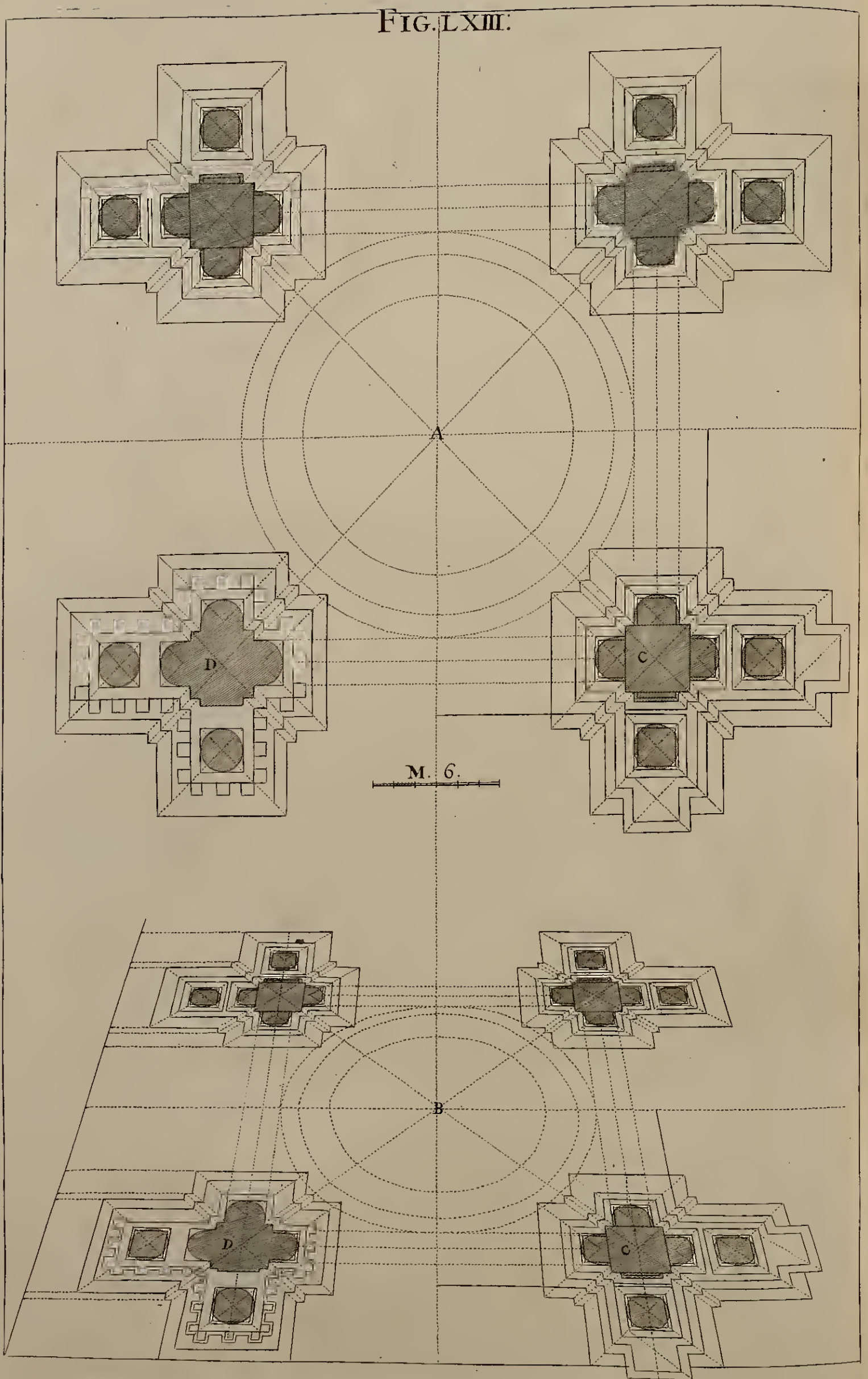


FIGURA Sexagesimatertia.

Vestigia ædificii quadrati.



ESTIGIUM geometricum A hujus ædificii habet in B suam deformationem. Discrimen inter pilas C & D oritur ex eo, quòd in C posita sint vestigia stylobatarum, in D autem posita sint vestigia coronicum.

The Sixty-third FIGURE.

The Plan of a square Design.



THE Geometrical Plan of this Design A, is brought into Perspective in B. The Difference between the Parts C and D arises from hence, that the Plan of the Pedestals is plac'd in C, and that of the Cornice in D.

FIGURA Sexagesimaquarta.

Ædificium quadratum.



X deformatione vestigii & elevationis, methodo consuetâ eruitur imago totius ædificii, quæ potest esse exemplar aræ maximæ alicujus Ecclesie. Hanc machinam, non sine communi approbatione, aliquoties adhibui, in apparatu quadraginta horarum; locum in medio vacuum occupantibus Angelis cum nubibus, additâ figurarum aliquot copiâ in parte inferiori. Modus faciendi in telariis remotioribus ab oculo partem tholi rotundi quam hic vides, deducitur ex iis quæ tradidimus in projectione circularum.

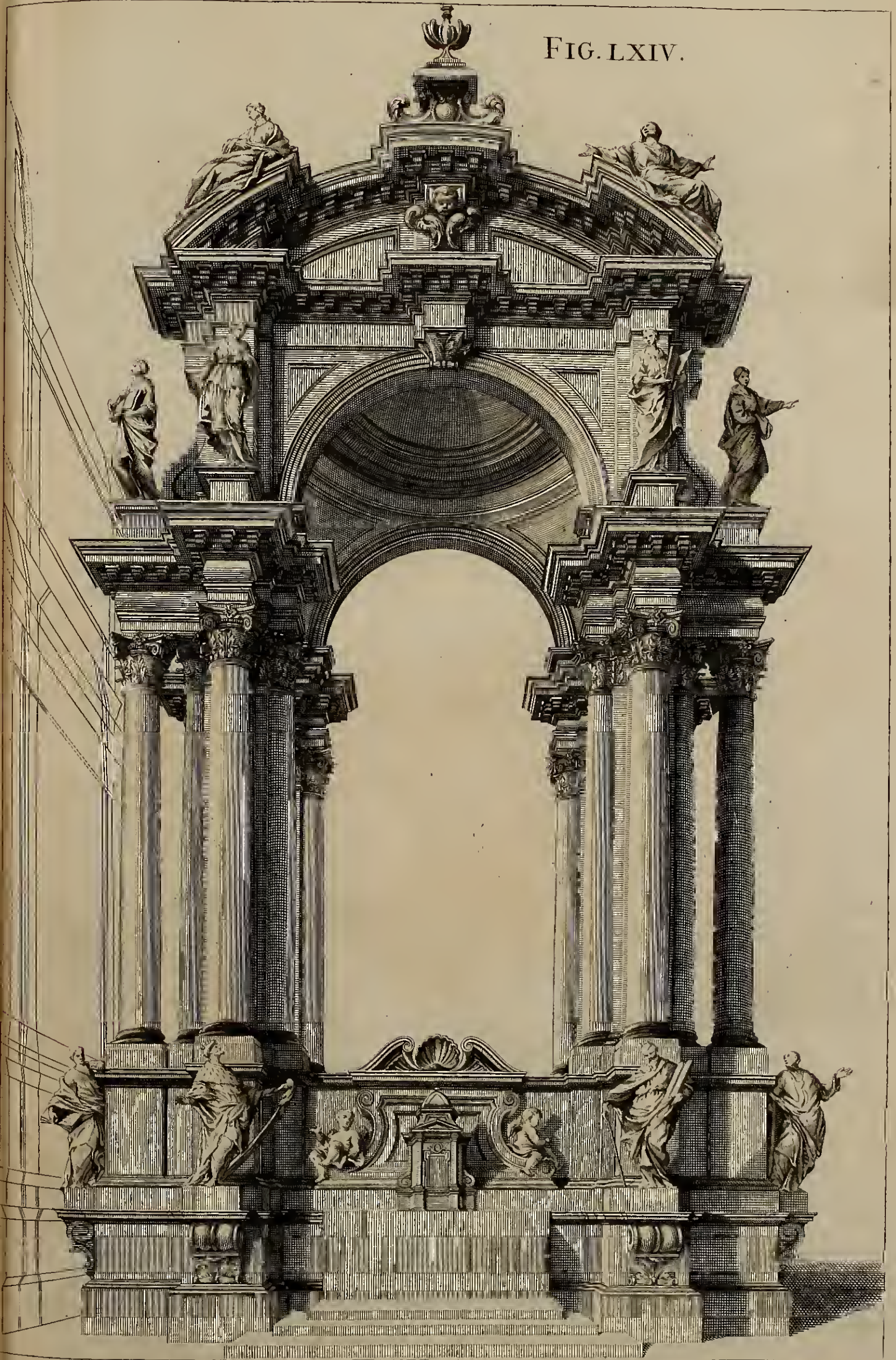
The Sixty-fourth FIGURE.

A square Design in Perspective.



FROM the Plan and Upright in Perspective, this finish'd Piece of the whole Work is delineated after the usual Manner, and may serve for the Design of a great Altar in a Church. I have sometimes, for the Solemnity of the *Forty Hours*, expos'd this painted on a Machine, with an universal Satisfaction; Angels with Clouds possessing the higher part of the Hemisphere within, and Groups of Figures the lower part. The Manner of designing on the inner Frame, that part of the said *Cupola* which you here see, is deduc'd from what has been before said of putting Circles into Perspective.

FIG. LXIV.





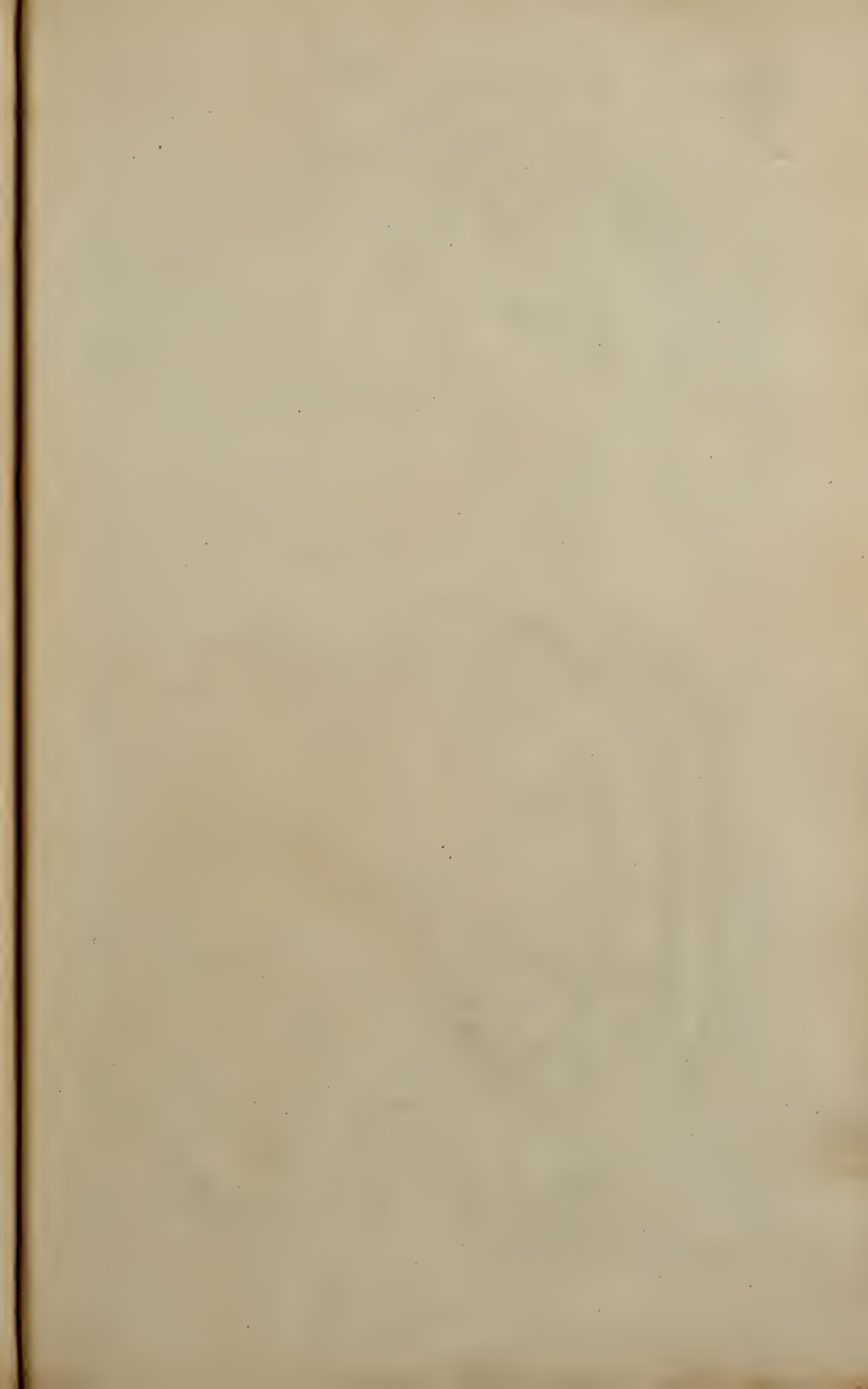


FIG. LXV.

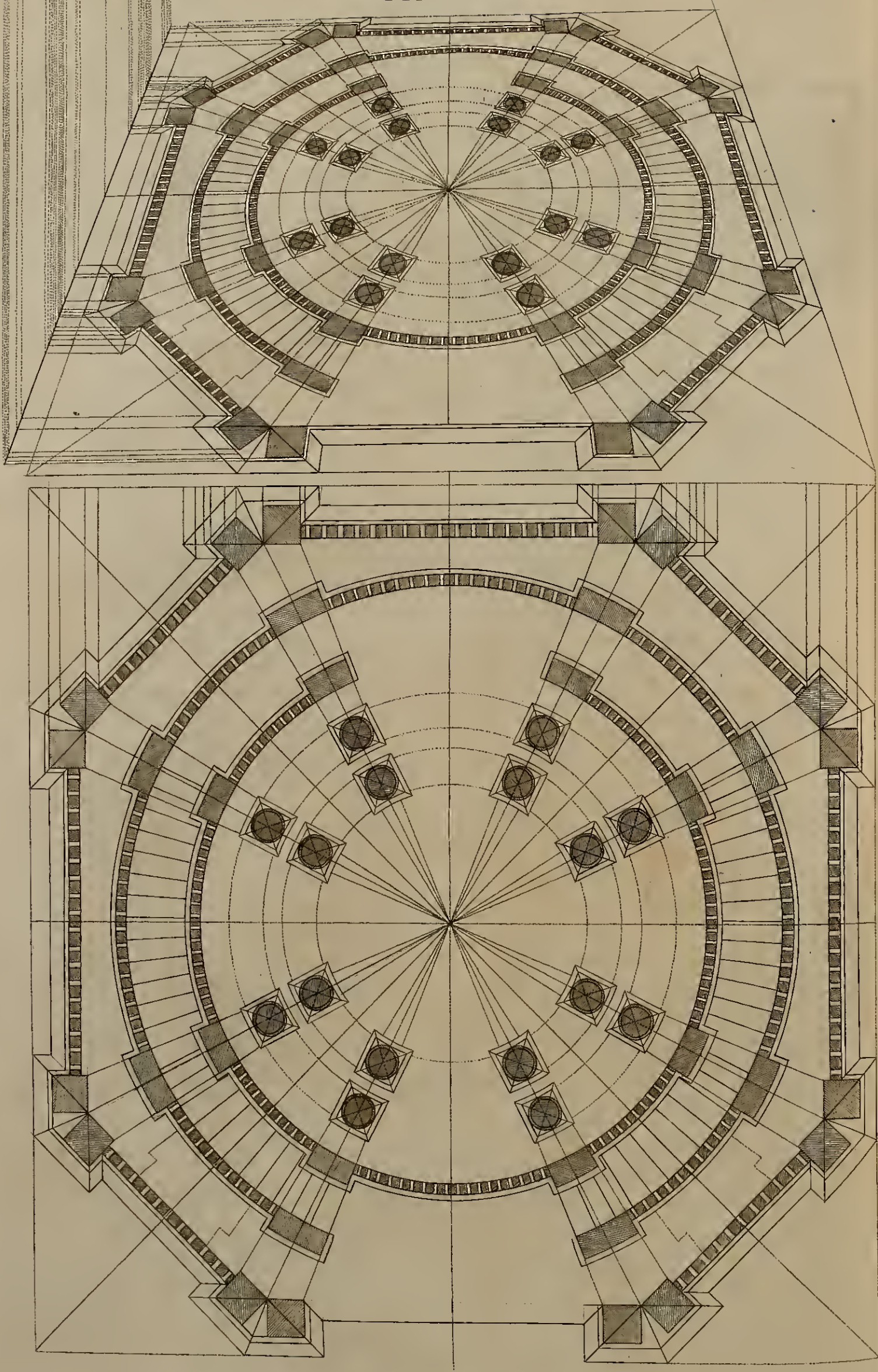


FIGURA Sexagesimaquinta.

Vestigium ædificii rotundi opticè imminutum.



UI sedulam operam in circulis deformandis non posuerint, eosque minimo negotio ex usu describere nequiverint, frustra conabuntur projicere vestigia ædificiorum rotundorum. Ad vitandam confusionem, proderit in vestigio notare primum lineas occultas membrorum præcipuarum; iisque translatis in elevationem, addere sensim reliquas. Hac industriâ ego ipse in hoc schemate usus sum. Quum autem experimento didicerim summam arduitatem harum descriptionum, aliam regulam adhibere jamdiu cœpi, quam, ut suprâ diximus, in aliud Opus reservamus.

The Sixty-fifth FIGURE.

The Plan of a Circular Work in Perspective.



HEY that have not diligently apply'd themselves to the putting Circles into Perspective, and, by a constant Practice, render'd the Work familiar to them, will in vain attempt that of the Plans of round Buildings. To prevent Confusion, you'll do well, first to mark the occult Lines of the principal Members; and after those are transferr'd into the Upright, then proceed to the rest, as I myself did in this Figure: But having found by Experience, the great Difficulty of describing these round things, I have long since made use of another Method, which, as I said before, is reserv'd for another Volume.

FIGURA Sexagesimasexta.

Projectio ædificii rotundi.



IRIFICE oculis imponunt imagines rerum rotundarum, si omnibus resectis quæ ad eas non pertinent, exactè delineatæ ac depictæ fuerint. Hanc figuram ex vestigio eruere oportebit methodo consuetâ, eamque in Templo S. Ignatii Collegii Romani construxi pro feriâ V & VI Hebdomadæ sanctioris. Intra arcum, super altari, locus erat urnæ sepulcrali, cum Venerabili Sacramento. Sub altari visebatur simulacrum Christi Domini è Cruce depositi: in medio columnarum, imago Beatæ Virginis dolentis; super balaustris Angeli lægentes, cum instrumentis cruciatuum Salvatoris.

The Sixty-sixth FIGURE.

A Circular Design in Perspective.

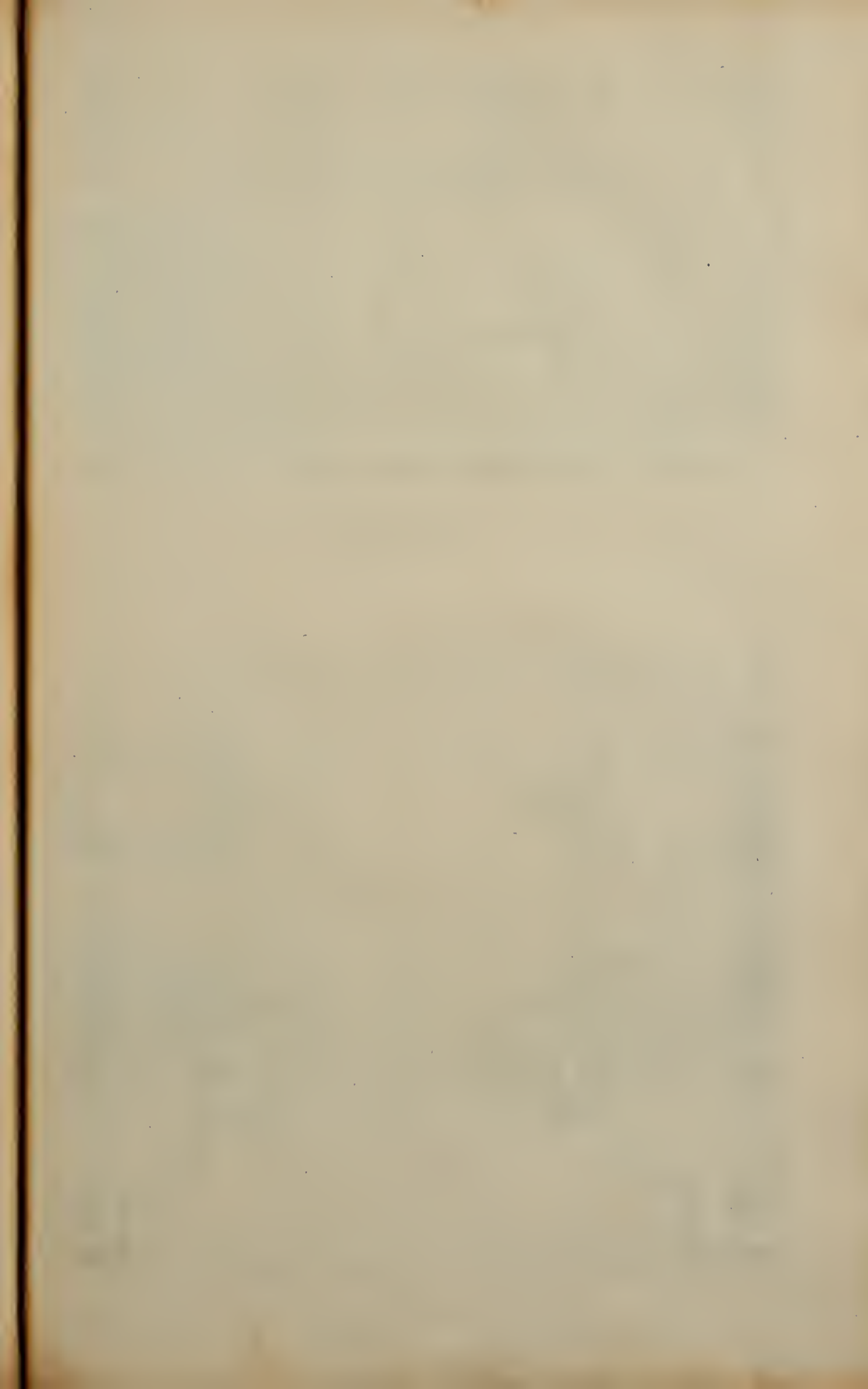


Blessed Virgin in extreme

Sortow; and on the Ballustrade, Angels mourning, bearing the Instruments of the Passion.

FIG. LXVI.





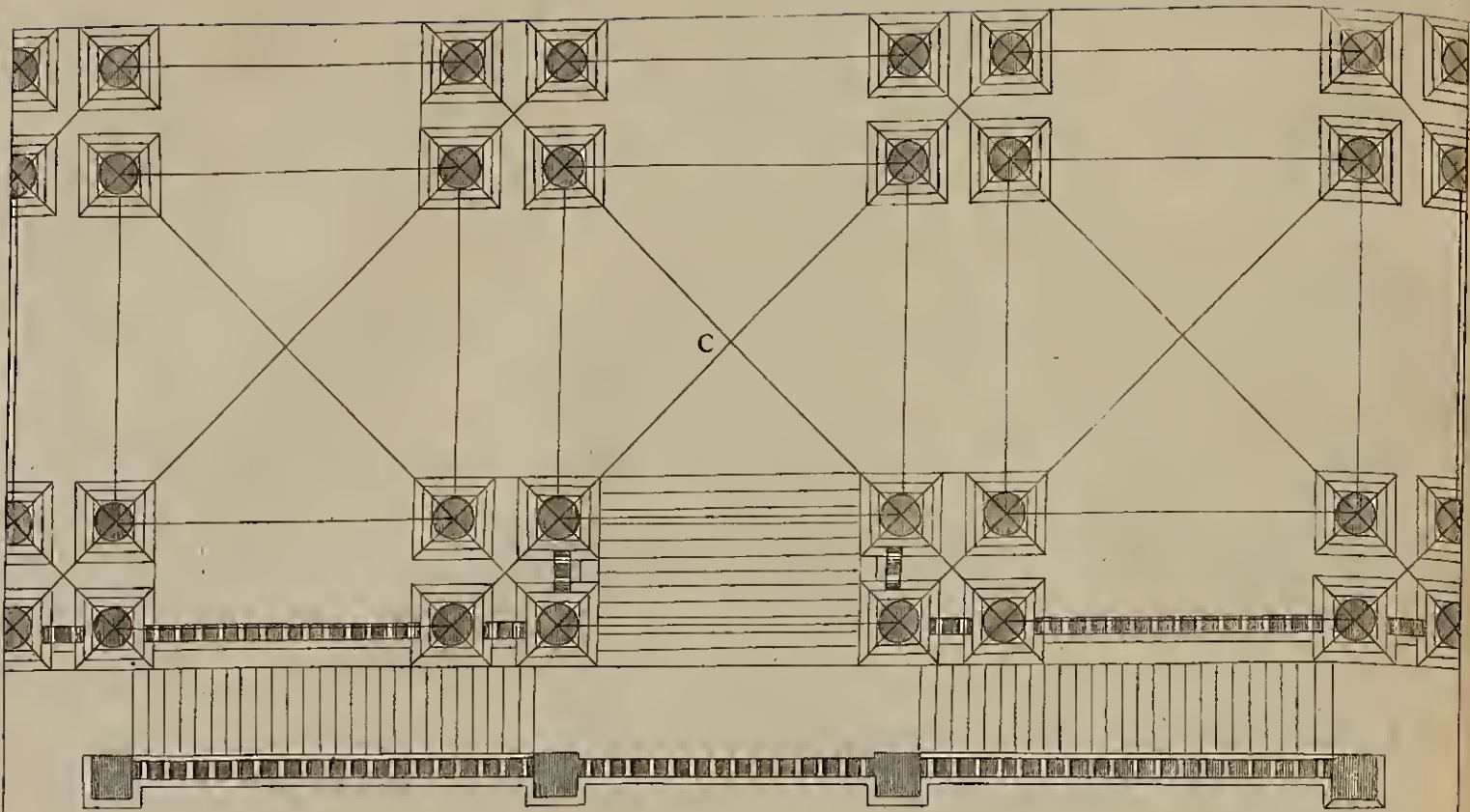


FIG. LXVII.

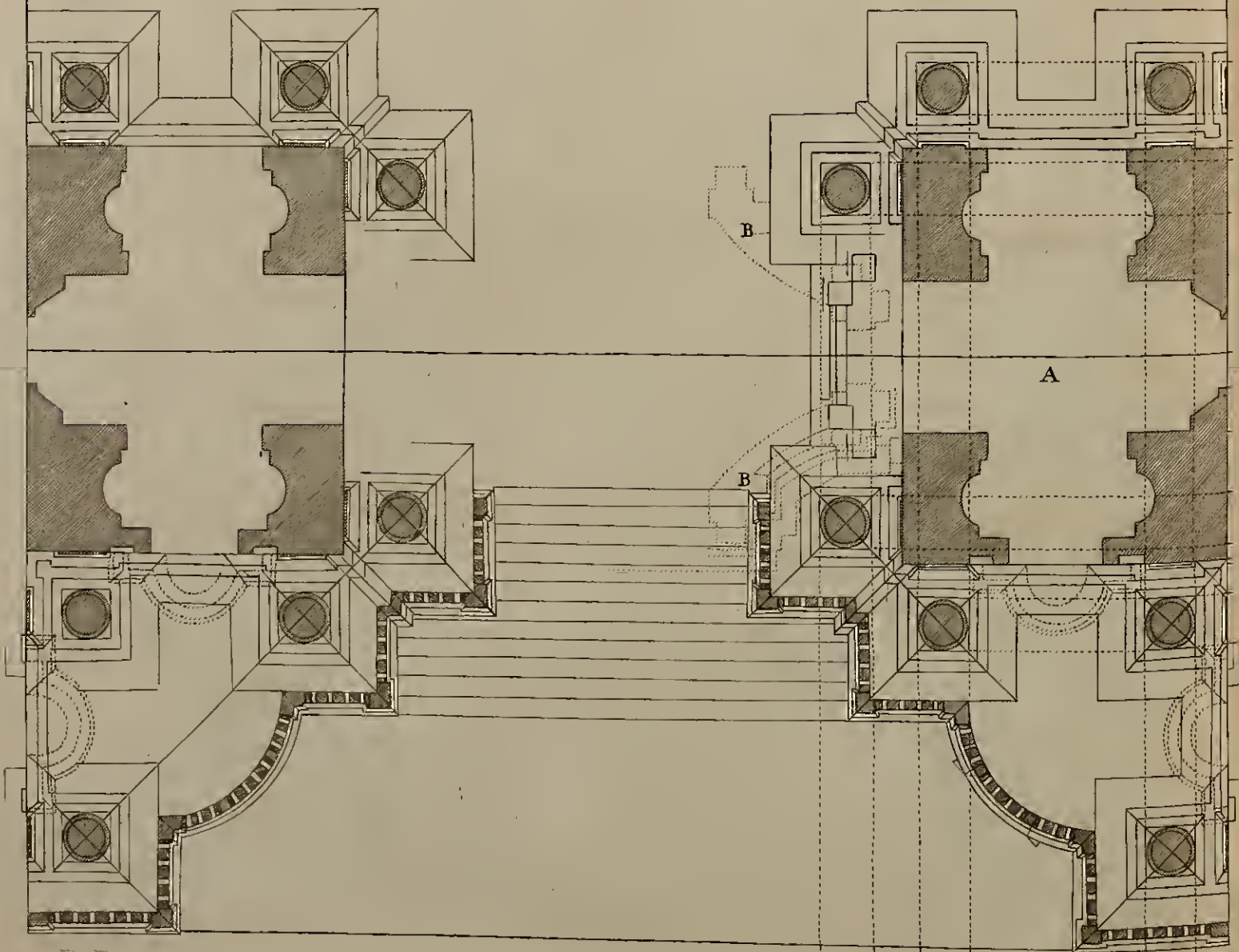


FIGURA Sexagesimaseptima.

Vestigium geometricum, ac prima præparatio ad figuram septuagesimamprimam.



GREGIAM adeò speciem prætulit, atque oculis adeò imposuit machina quam construxi anno 1685, pro supplicatione quadraginta horarum, in Templo Urbis Farnesiano, ut decreverim satisfacere Studiosis, publici juris faciendo non modò imaginem totius ædificii, sed etiam illius vestigia & elevationes: quæ omnia eâ diligentia delineavimus, veluti Opus ipsum non pennicillo colorandum, sed lapidibus extruendum fuisset. Spatia nigrantia soliditatem designant parietum & columnarum. Cæteræ lineæ sunt crepidines stylobatarum & coronicum. Initium delineationis fiet ab iis membris, ex quibus oriuntur lineæ occultæ positæ in A, (quæ autem dicuntur de hac medietate, intelligi debent de aliâ) ne multitudo linearum confusionem pariat. In B lineæ curvæ occultæ sunt vestigium tболи qui complet summitatem ædificii. Vestigium C exhibet ambulacrum interius. Omisimus autem vestigium theatri, quia pagine angustia illud non capit.

The Sixty-seventh FIGURE.

The Geometrical Plan, and first Preparation to the Seventy-first Figure.



THE Machine which I erected in the Year 1685, in the Church *Farneze*, or *Jesuits Church* at *Rome*, for the Devotions of the *Forty Hours*; had so admirable an Effect, and so pleasantly deceiv'd the Eye, that I resolv'd to gratify the Studios, not only with a general View, but with the Plan and Elevation thereof; all which was perform'd with such Exactness, that the Work itself seem'd rather to consist of solid Stones, than to be wrought by the Painter's Hand. The hatch'd Part denotes the Solidity of the Walls and Columns. The other shews the Breaks and Projectures of the Pedestals and Cornices. Lest many Lines should cause Confusion, begin with those Members, which produce the occult Lines on the Side A; understanding the same also of the other half. In B the occult curv'd Lines are the Plan of the *Cupola* which crowns this Structure. The Plan C is that of the inner Vestibule, but that of the Theater is here omitted, through Want of Room in the Page.

FIGURA Sexagesimoctava.

Elevatio geometrica vestigii præcedentis, & secunda præparatio ad figuram septuagesimamprimam.



N hoc schemate habes elevationem ædificii sectam in longum, quam figurâ septuagesimâ opticè projiciemus: eisdemque membris constare videbis elevationem deformatam, quibus constat elevatio geometrica. Hinc disces ad excogitandas hujusmodi machinas, eandem Architecturæ scientiam in Pictore necessariam esse, quæ ad construenda solida ædificia exigitur in Architecto.

The Sixty-eighth FIGURE.

The Geometrical Elevation of the foregoing Plan, and second Preparation to the Seventy-first Figure.



N this Figure you have the Elevation of the aforesaid Structure dissected lengthwise; the Perspective thereof is describ'd in the Seventieth Figure; and you may observe that both of them consist of the same Members: whence you may perceive, that for designing things of this kind, the Painter ought to have no less Skill in Architecture, than is requir'd for the Execution of solid Works.

FIG. LXVIII.

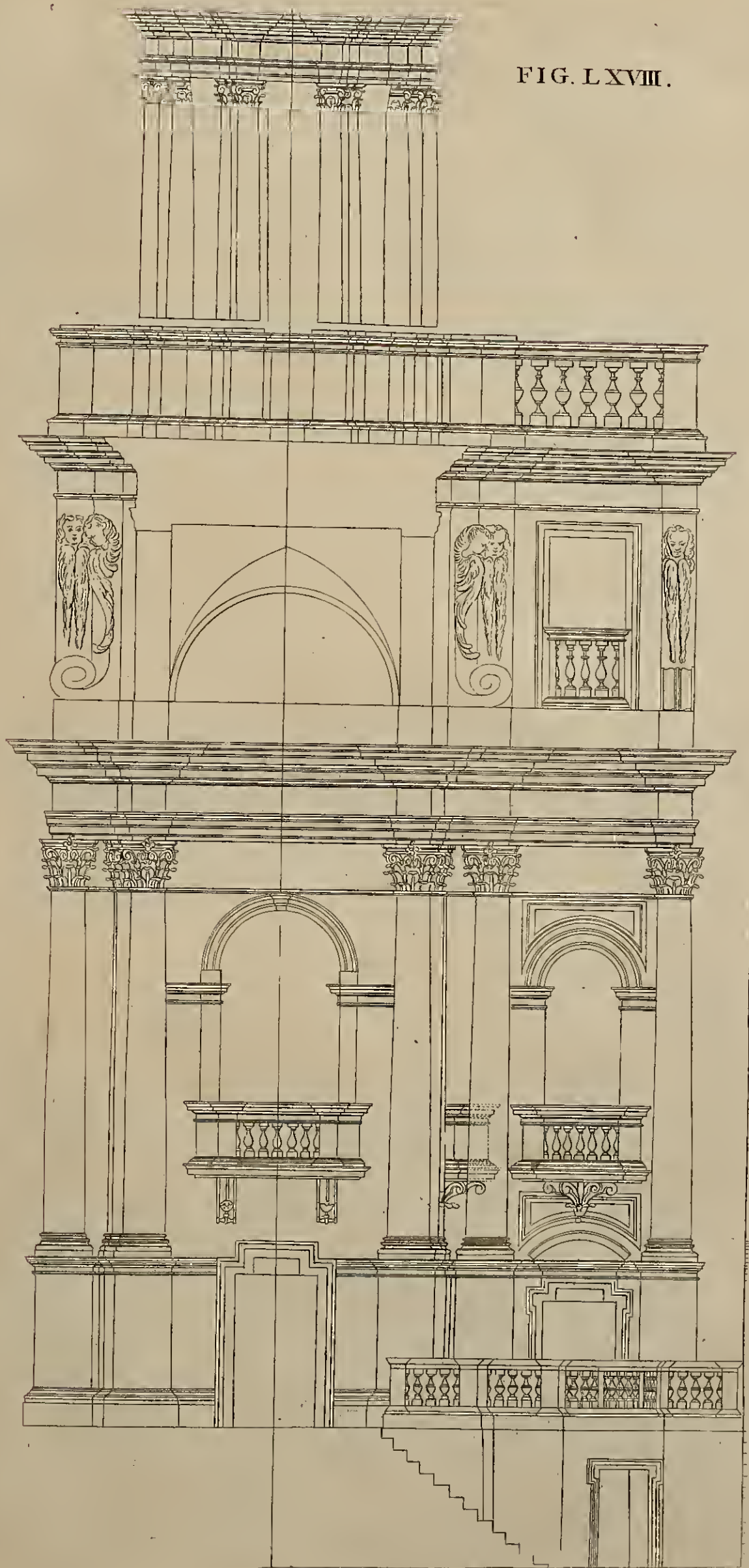




FIG. LXIX.

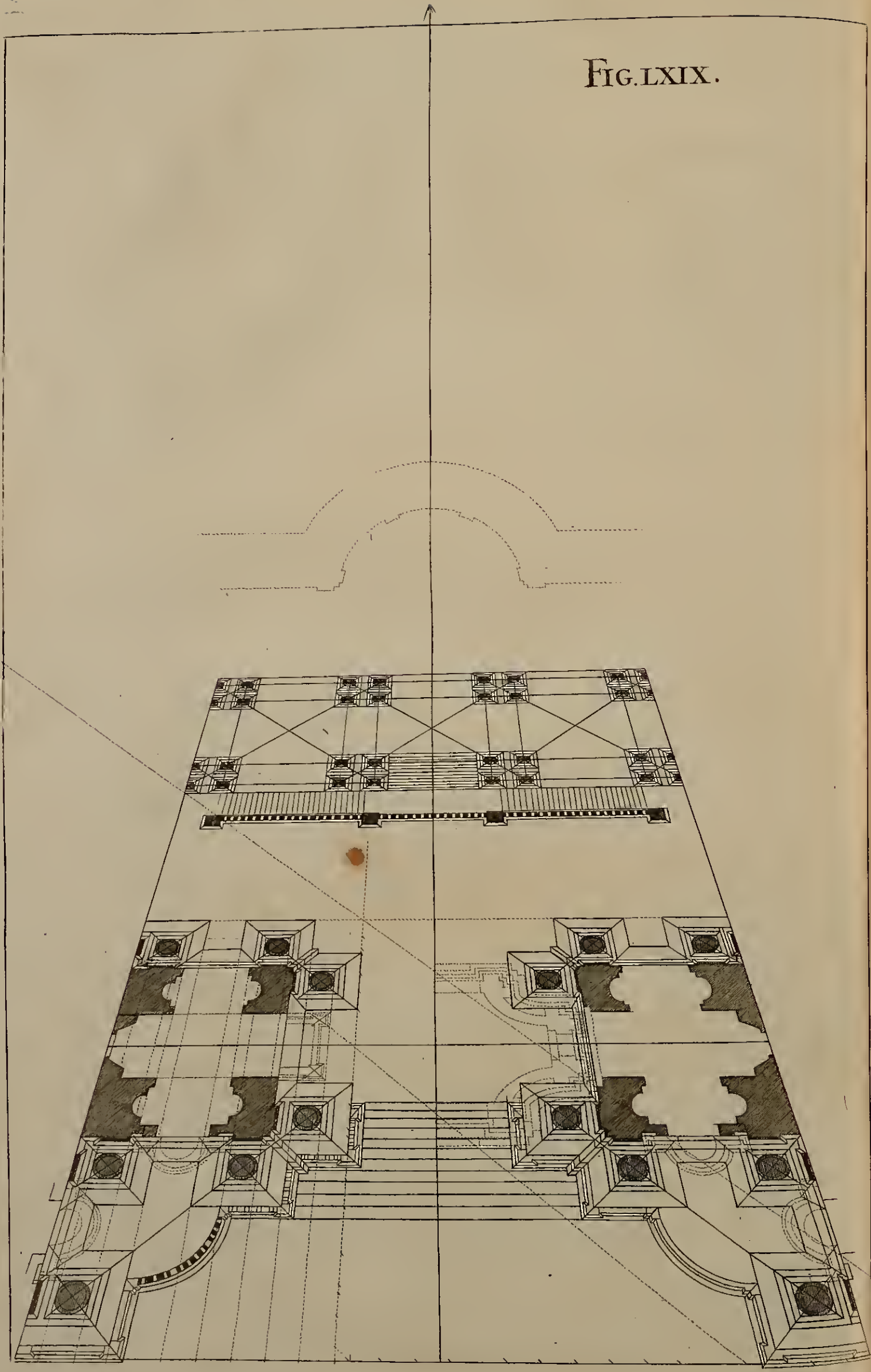


FIGURA Sexagesimanona.

Deformatio vestigii figuræ sexagesimæseptimæ, & præparatio tertiâ ad figuram septuagesimamprimam.



RTIFICIUM projectionis vestigii hujus, explicatum à nobis est figurâ quadragesimasecundâ. Nimirum, ut parallele sint invicem distantiores, lineam plani deorsum protraximus, ut ex intuitu figuræ statim cognosces.

The Sixty-ninth FIGURE.

The Plan of the Sixty-seventh Figure in Perspective, and third Preparation to the Seventy-first Figure.



THE Artifice us'd in projecting the Perspective of this Plan, has been already shewn in the Forty-second Figure; namely, that for giving the greater Distance between the Parallels, the Ground-line is drawn much lower than its true Place; as is manifest on Inspection of the Figure.

FIGURA SEPTUAGESIMA.

Deformatio elevationis figuræ sexagesimæ octavæ, & præparatio quarta ad figuram septuagesimam primam.



UÆ dicta sunt de projectione vestigii nostri ædificii, habent locum in elevatione. Nimirum, ut parallelae invicem notabiliter distarent, usus industriâ quam declaravimus figurâ quadragesimâ secundâ.

The Seventieth FIGURE.

The Perspective of the Elevation of the Sixty-eighth Figure, and the fourth Preparation to the Seventy-first Figure.



THAT has been said of the Perspective-Plan of this Structure, is also here practis'd in the Elevation; namely, that the Parallels might be sufficiently distinct, the Perpendiculars are drawn more remote from the Point of Sight, as was shewn in the Forty-second Figure.

FIG. LXX.



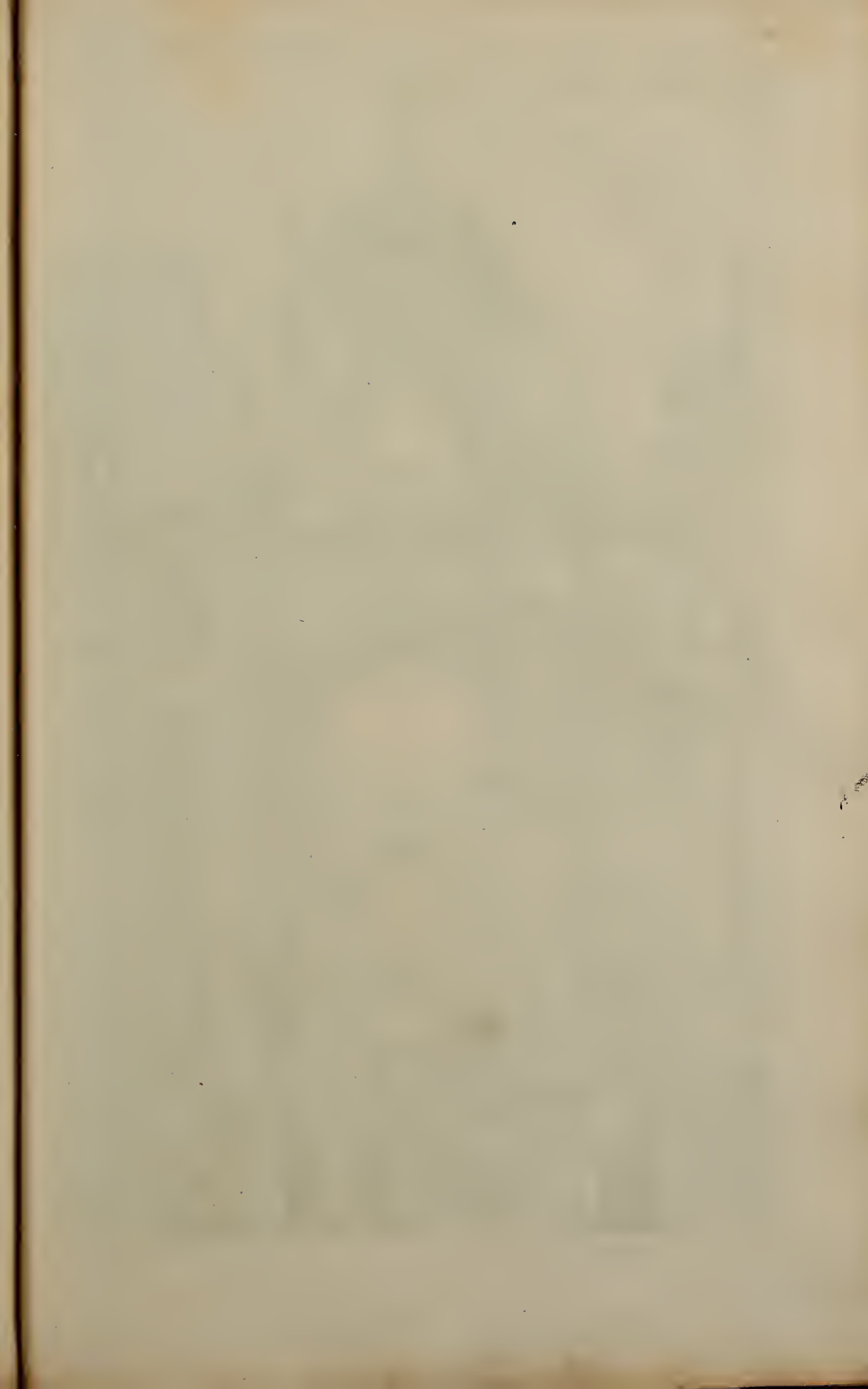


FIG. LXXI.

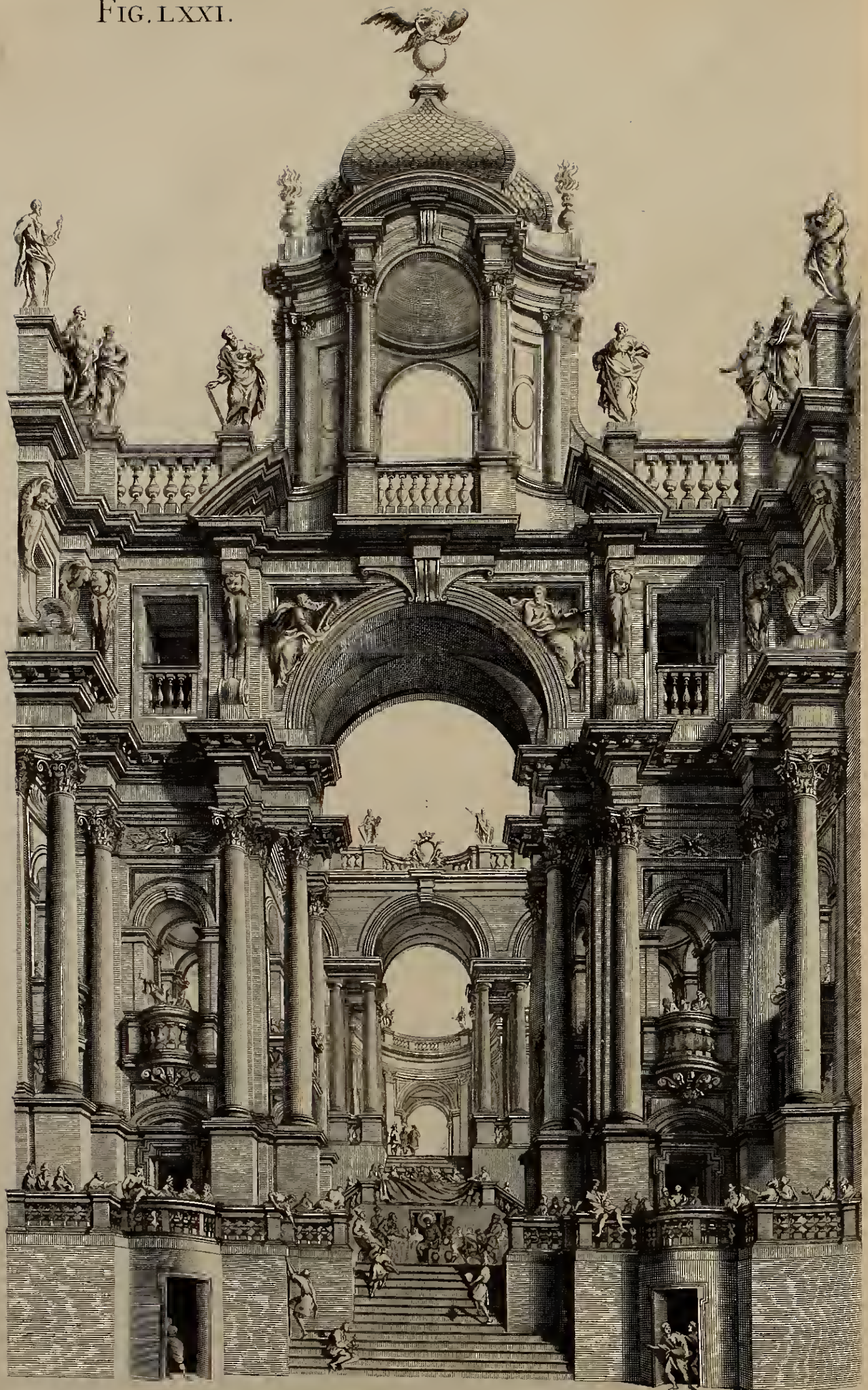


FIGURA Septuagesimaprima.

Theatrum repræsentans Nuptias Canæ Galilææ, constructum Romæ, anno 1685. in expositione Ven. Sacramenti in Templo Farnesiano Societatis JESU.



X antecedentibus præparationibus eruius projectionem nobilis hujus Architecturæ, quæ oculos implebat tum ad lucem solis diurnam, tum præcipuè ad lumen candelarum; ex quibus multæ palam erant expositæ, aliæ omnino latebant, ut illuminarent sex diversos ordines telariorum quibus tota machina constabat, non computando in hoc numero telaria, quæ in medio arcûs maximi exprimebant nubes refertas Angelis adorantibus Venerabile Sacramentum. Nubes istas omisimus, ne absconderentur partes interiorum edificiorum. In disponendis autem ordinibus telariorum, servatus est modus quem declaravi figurâ sexagesimaprima & sexagesima-secunda; ac præterea in eligenda eorum distantia curatum fuit, ut candelæ in parte postica telariorum collocatæ, illuminarent faciem telariorum interiorum. Porro quot membra præcipua in duabus faciebus majoribus, totidem distincta telaria numerabantur, quorum proinde connexiones discerni vix poterant; eorumque aliquot paria ferreis hamulis copulata erant, ut explicari ac replicari possent, ad faciliorem tractationem diuturnioremque conservationem.

Qui bucusque sequuti me fuerint, nihil dubito quin suum iter felicissimè sint prosequuturi; atque Opera his nostris majora melioraque inventuri.

The Seventy-first FIGURE.

A Theater representing the Marriage of Cana in Galilee, erected in the Jesuits Church at Rome, in the Year 1685; for the Solemnity of exposing the Holy Sacrament.



FROM the foregoing Preparations, is drawn the Perspective of this noble Piece of Architecture; which struck the Eye when seen by Day-light, but was more especially surprizing by Candle-light; many of the Candles being expos'd to Sight, and others altogether hidden, to illuminate the six different Ranges of Scenes, of which the whole Work consisted, without reckoning that in the midst of the great Arch, representing Clouds fill'd with Angels adoring the blessed Sacrament. Those Clouds are here omitted, that the inner Parts of the Work might be the better seen. In disposing the several Ranges of Scenes, the same Method was observ'd, which was deliver'd in the Sixty-first and Sixty-second Figures; and great Care was also taken in their Distances, that the Candles plac'd on the Back of one of them might illuminate the Face of the other behind it. Moreover, each Scene consisted of as many parts, as there were principal Members in the two greater Façades; so that the Joints were scarcely discernible: and some Pairs of them being coupl'd with Hinges, folded and unfolded, for the more easy managing and preserving them.

I doubt not but those who have follow'd me thus far, will be encourag'd so to prosecute their Studies, as to be able to design even greater and more noble Works, than these of mine.

FIGURA Septuagesima secunda.

De theatris scenicis.



THEATRIS quæ jam delineavimus affinita sunt theatra scenica: in his tamen non admodum facile reperitur punctum oculi seu perspectiva. Præterea, quia ex obliquitate canalium intra quos moventur scena, oritur ut linea recta quæ videri debent parallela ad lineam plani, non debeant esse parallela sed obliqua, harum delineatio difficultate non caret. Incommodum istud vitari posset adhibendo canales parallelos ad poscenium, ut alicubi fieri solet, præsertim in Germaniâ. Nihilominus usus Italicus affert hoc adjumentum, ut illi quibus incumbit suggerere actoribus, vel scenas movere, aliisque similibus præesse, facilius lateant & liberiùs fungantur manere suo.

Ut brevem summam habeas eorum quæ deinde latius declaraturi sumus, hanc figuram contemplare. 1, 2, 3, 4, est vestigium aulæ quæ habet in longitudine centumviginti palmos Romanos, in latitudine sexaginta palmos; ut ostendit scala S triginta palmorum. Medietatem loci occupat theatrum, medietatem obtinent podia & loca spectatorum. O punctum in quo uniuntur lineæ visuales, D locus pro apparentiis rerum magis ac magis distantium. BC locus poscenii. HH sunt canales obliqui, quorum latitudo est dupla latitudinis scenarum. FG frons & facies theatri. AO ejus profunditas aut longitudo. E locus pro psaltibus, tibicinibus, & fistulatoribus. K spatium pro spectatoribus. I vestigium podiorum. L scala podiorum. N ipsorum elevatio. M declivitas tabulati, cum sectione & elevatione theatri, & scenis ex latere inspectis, quæ cum suis canalibus congruunt, ut demonstrant lineæ occulta. OO lineæ normalis ad lineam horizontalem. P & Q elevatio scenarum coram inspectarum, quæ introrsum flectuntur; & in latitudine congruunt cum canalibus vestigiæ B, in altitudine cum sectionibus elevationis M; ut constat ex lineis occultis. In eadem elevatione M pars altitudinis tribuenda est scenis, pars laquearibus R, per quæ jungitur unumquodque par telariorum. VV lineæ ad explorandum an detur vacuum inter scenas & laquearia, vel inter scenas, vel inter laquearia. In quibusdam autem scenis, loco laquearium pinguntur nubes & aer.

The Seventy-second FIGURE.

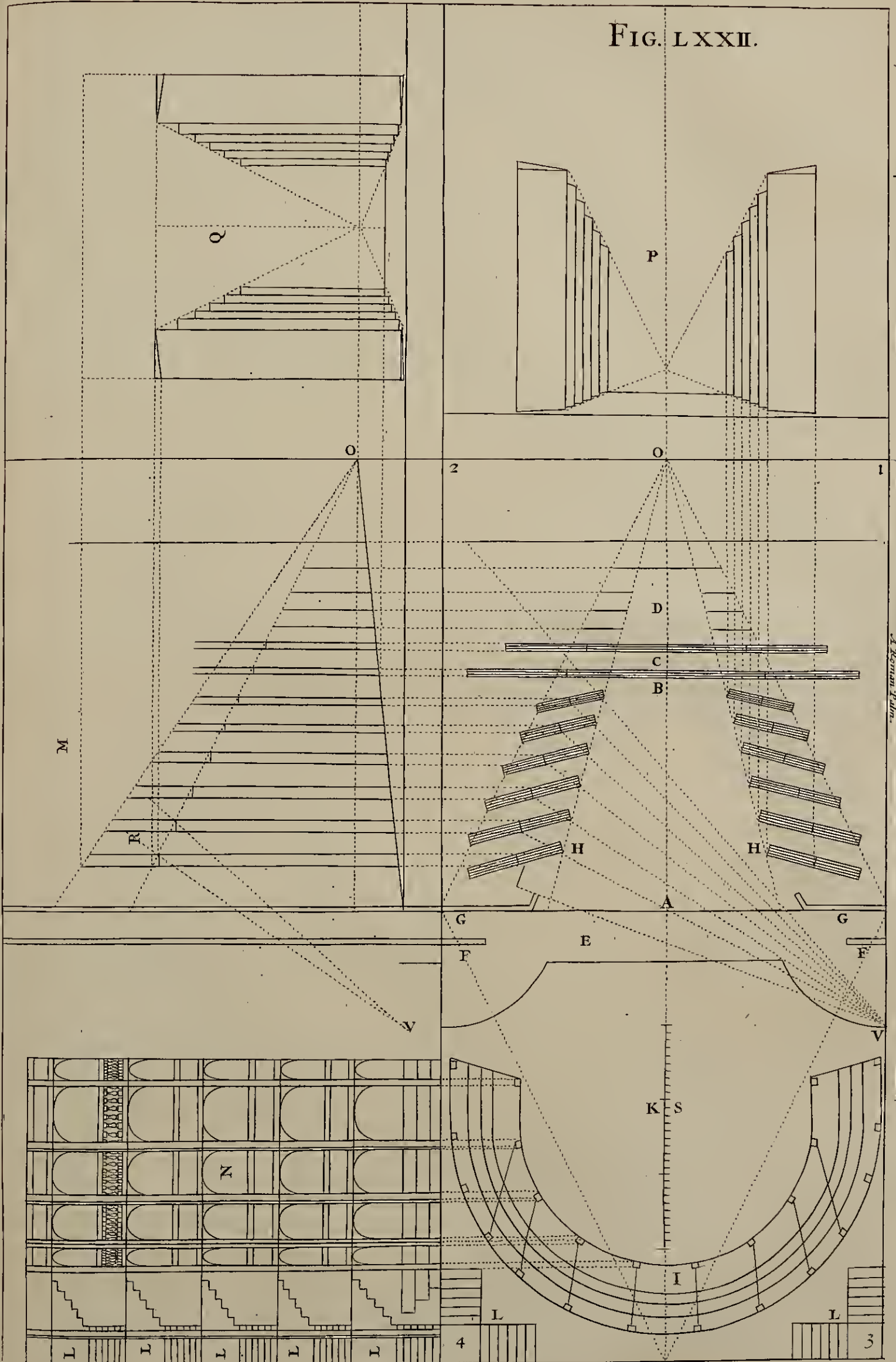
Of Scenes for the Stage.



SCENES for the Stage have very much Affinity with those lately describ'd, but the Point of Sight is not so easily found in these; and from the Obliquity of the Grooves in which the Scenes run, it comes to pass, that the right Lines which ought to appear parallel to the Line of the Plan, must not be drawn parallel thereto, but oblique; which is a Work of some Difficulty. This indeed may be avoided, by fixing the Grooves parallel to the Poscene; as is usual in some Places, especially in Germany. Nevertheless, the Italian Manner has this Advantage; That those who are employ'd to prompt the Actors, and shift the Scenes, &c. are less expos'd to Sight, in the Performance of their Business.

In this Figure I have given you an Abridgment of those things, which shall hereafter be more enlarg'd on. The Numbers 1, 2, 3, 4, denote the Area of a Hall an hundred an twenty Roman Palms in Length, and sixty, in Breadth; as is manifest from the Scale of thirty Palms mark'd S. Half this Space is taken up by the Stage, the other half by the Spectators. O is the Point in which the visual Lines concenter. D is the Place of those things that are to appear most remote. BC is the Place of the Poscene. HH are the oblique Grooves, whose Lengths are double the Breadth of the Scenes. FG is the Front of the Stage. AO is its Depth or Length. E is the Place for the Musick. K is the Room for Spectators. I is the Plan of the Galleries. L the Stairs to the same. N is the Elevation of the Galleries. M shews the Declivity of the Floor, with the Section and Elevation of the Stage and Scenes view'd on the Side; answering their respective Grooves, as the occult Lines demonstrate. OO is a Line perpendicular to that of the Horizon. P and Q are the Elevation of the Scenes view'd in Front, turning inwards, in Breadth agreeing with the Length of the Grooves of the Plan B; and in Height answering that of the Sections of the Elevation M; as is evident from the occult Lines. In this Profile M, part of the Height belongs to the Scenes, and part to their Soffites, or Ceilings, R; where each Part of these Frames are join'd. VV are the Lines by which is espy'd what Vacancy there is either between the Scenes and their Ceilings, between the Scenes themselves, or between their respective Ceilings; though in some Scenes the Place of these last is supply'd by painting therein the Ait with Clouds, &c.

FIG. LXXII.



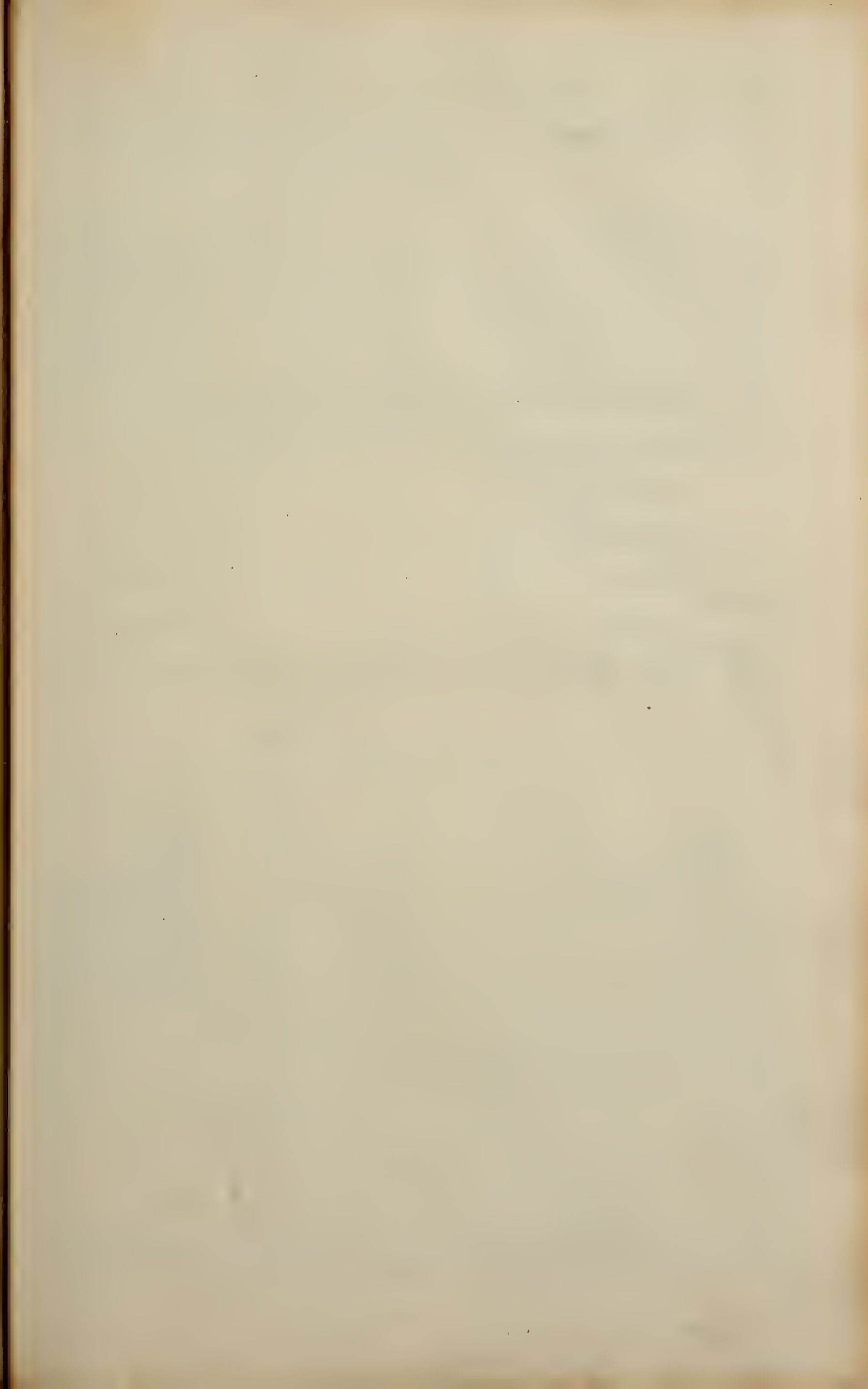
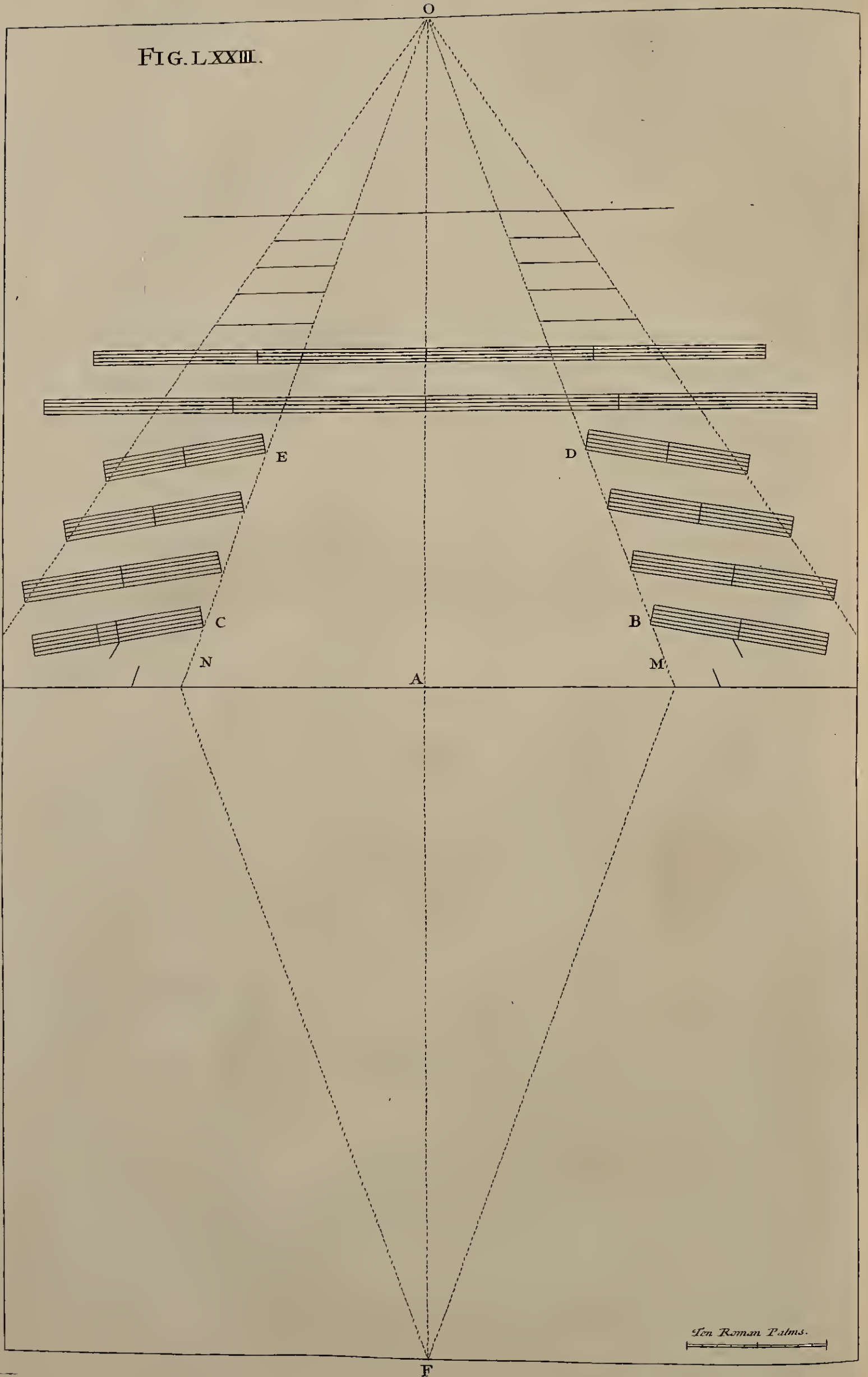


FIG. LXXIII.



Ten Roman Palms.

FIGURA Septuagesimatertia.

Aliud vestigium theatri, ubi de modo inveniendi
ejus punctum.



I pingendæ sint scenæ theatri alicujus antea constructi, delineare oportebit vestigium geometricum ex ipso erutum, (ad formam vestigii quod cernis in hac paginâ) ut inveniatur longitudo theatri, seu distantia quam ejus punctum habet à puncto A: id autem nullo negotio fiet, accipiendo distantias BC inter primos canales, & DE inter ultimos, ac ducendo visuales MO, NO: nam theatrum habebit longitudinem AO, ac punctum perspectivæ in vestigio theatri erit O. Præterea scire oportebit longitudinem & latitudinem canalium, eorumque numerum, distantias, & flexus; ac præcipuè curandum est, ut licet sint obliqui ad lineam

MN, sint invicem paralleli in unoquoque latere, ac singuli tangant lineas MO, NO. Jam si rectæ AO fiat equalis rectæ FA, in F erit punctum distantia: adeoque si theatrum juxta methodum à nobis tradendam depictum fuerit, spectatori qui consistat in F apparebit veluti tabula picta juxta leges perspectivæ, posita in A:

The Seventy-third FIGURE.

*Another Plan of a Theater, with the Method of finding
the Point of Sight therein.*



If it be requir'd to paint the Scenes of some Theater already built, the Geometrical Plan thereof must first be carefully drawn, (as you see, for Example, in this Plate) that the Length of the Theater may be found; or the Distance of its Point from that of A; which is easily done, by taking the Interval BC of the first Grooves, and DE of the latter; and drawing the Visuals MO, NO: for AO is the Length of the Theater, and the Point of Sight, or Perspective, therein, is O. Moreover the Length and Breadth of the Grooves must be known, as also their Num-

bers, Distance, and Obliquity; and especial Care must be taken, that though they be oblique to the Line MN, that on each Side they be Parallels between themselves, and that they all touch the Lines MO, NO. If you then make AO equal to FA, the Point of Distance will be F; and if the Theater be painted according to the Rules hereafter given, it will appear to him that views it from F, as a regular Piece of Perspective plac'd in A.

Figura Septuagesima quarta.

Sectio Scenarum Theatri.



RÆTER vestigium Theatri delineanda est sectio scenarum. Itaque si acceptis mensuris altitudinis, quam punctum A unde incipit tabulatum, ac punctum D poscenii, habent supra planum horizontale FV, fiant ex perpendicularo NV tum recta ADO, ex qua innotescit declivitas tabulati, tum recta NO, que sit parallela ad FV & equalis rectæ AO figure septuagesimæ tertie; punctum theatri in elevatione est O; in poscenio verò punctum theatri est Q. Si maxima scenarum altitudo sit EB, recta OE dat altitudinem omnium reliquarum. Vera tamen altitudo cujuslibet scene est illa quam habet linea major, ex minori autem dignoscitur quantum obliquitas cujusque scene apparenter minuat altitudinem extreme illius lineæ. Porro excessus quo linea major superat minorem tum in summo tum in imo, diligenter notandus est, hinc enim pendet intelligentia figure septuagesimæ quinte. Punctum M quod est remotum ab N quantum in figura septuagesimæ tertie punctum F est remotum ab A, designat locum unde Theatrum spectari oporteat, ut ibidem notavimus.

In construendo tabulato solet servari hec regula, ut altitudo puncti O sit equalis altitudini oculi, & elevatio ex A usque ad D sit nona circiter vel decima pars ipsius longitudinis AD. Expediret autem ad scenas facilius movendas, pavementum esse profundius pavimento G, ut erecto corpore sub tabulato ambulari possit.

Seventy-fourth Figure.

The Section or Profile of Scenes for Theaters.



BESIDES the Plan of the Theater, the Section of the Scenes is also to be delineated, for finding the Point of the Theater in the Elevation. Wherefore, setting the Measures of the Heights which the Point A, where the Floor of the Stage begins, and the Point D of the Poscene, have above the Level of the Horizontal FV; from the Perpendicular NV draw the right Line ADO, which gives the Declivity of the Stage; then make NO parallel to FV, and equal to AO of the Seventy-third Figure: The Point of the Theater in Elevation is O; the Point of the same on the Poscene is Q. If EB be the greatest Height of the first Scene, the Line OE determines the Height of all the others. The longest of the two Lines gives the true Height of each Scene; and the shorter discovers how much of that Height the Sight loses on the Out-line, by the oblique Position of the Scenes. Moreover, the Excess of the longer Line above the shorter, as well at top as at bottom, is to be well observ'd; for on this depends the right Understanding of the Seventy-fifth Figure. The Point M, which is as far distant from N, as that of F is from A in the Seventy-third Figure, denotes the Place from whence the Stage ought to be view'd; as is there mention'd.

In laying the Floor of the Stage, this Rule is commonly observ'd, That the Height of the Point O be made equal to the Height of the Eye, and that the Rise of the Floor from A to D, be about a Ninth or Tenth Part of the Length AD. 'Tis also requisite, for the better shifting the Scenes, that the Pavement F be sunk lower than that of G, that a Man may walk upright under the Floor thereof.

FIG. LXXV.

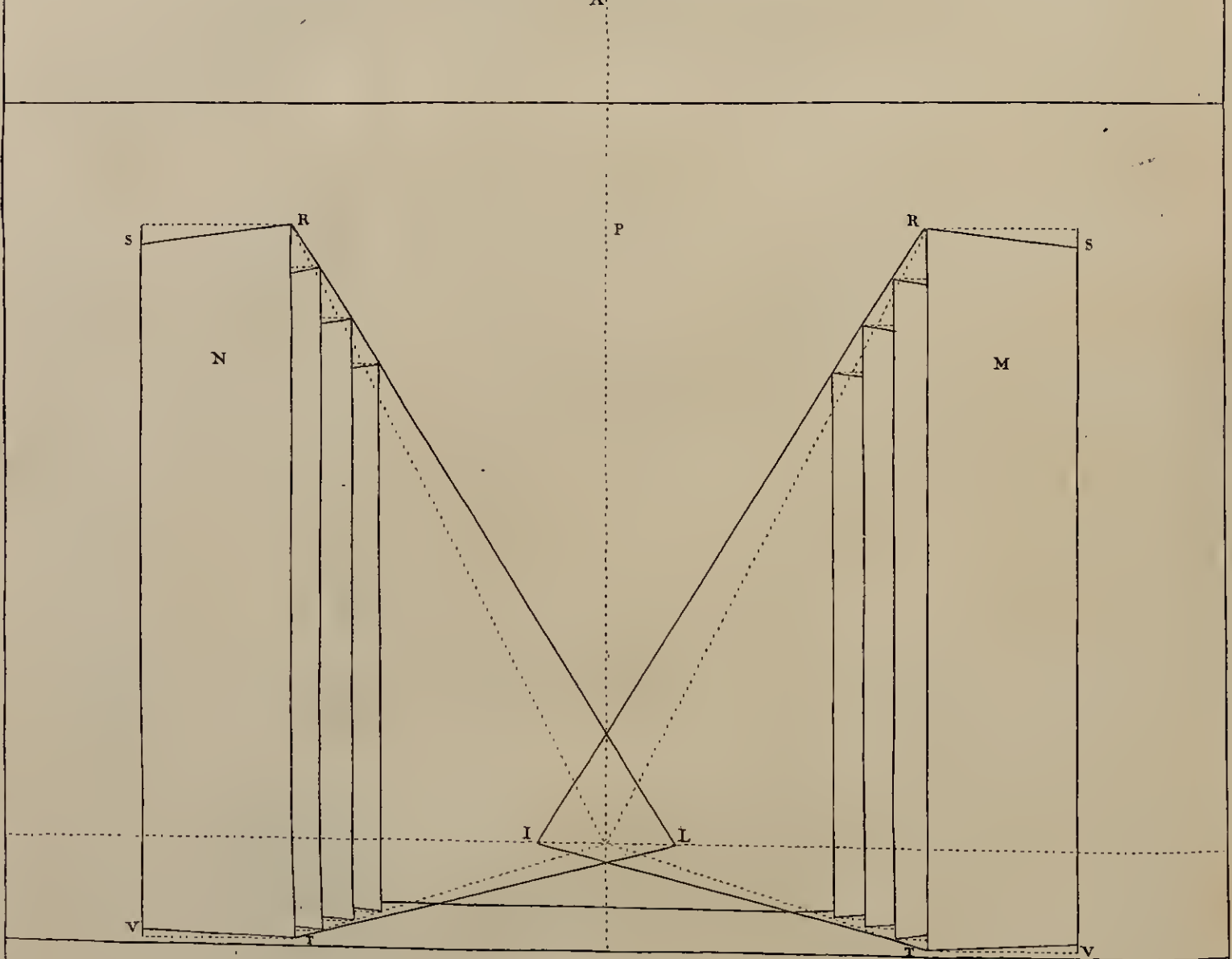
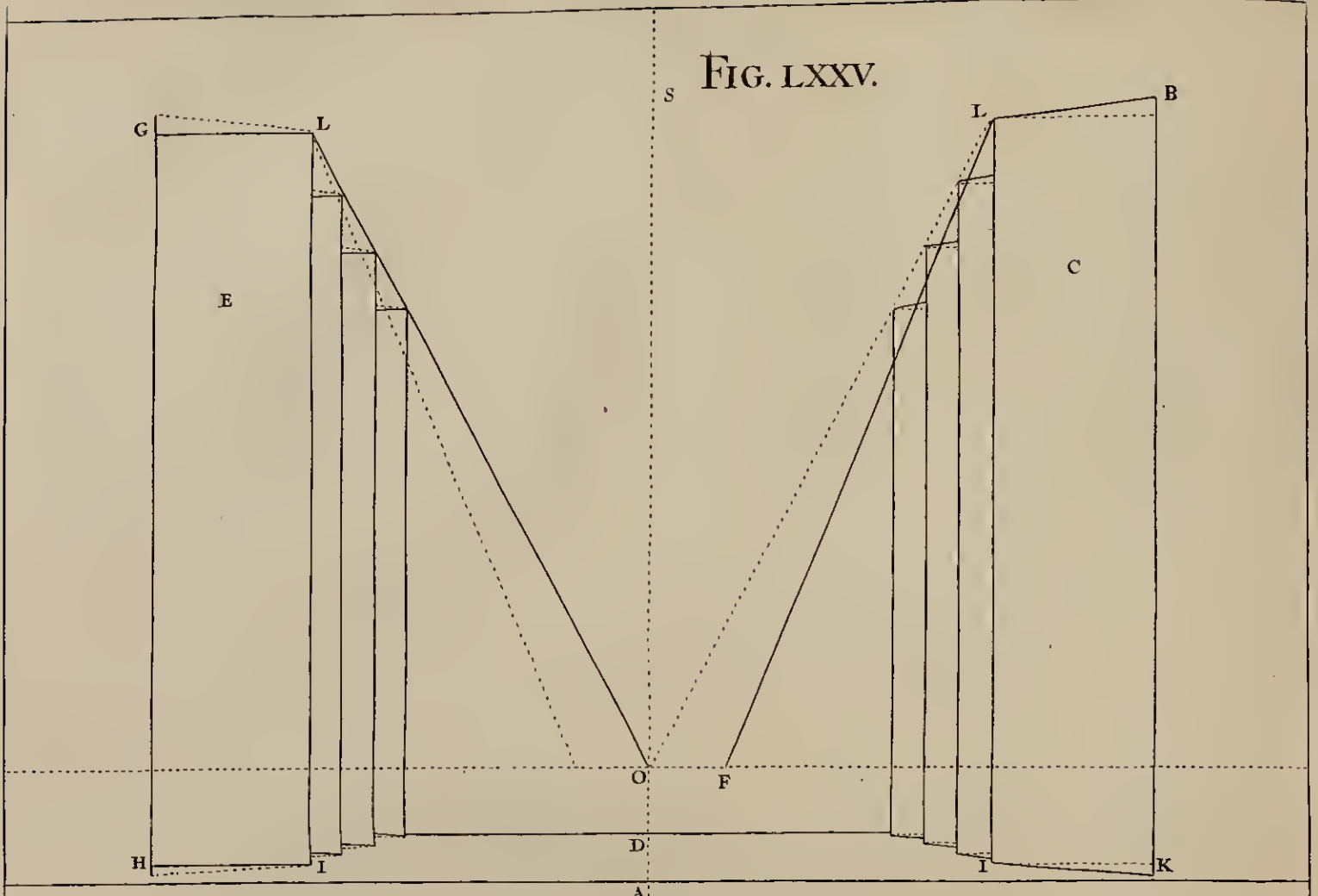


FIGURA Septuagesimaquinta.

Elevatio scenarum coram inspectarum : ubi docetur artificium ut scenæ obliquæ appareant rectæ.



CENÆ quas vides in *S*, habent suam latitudinem à vestigio figura septuagesimatertia, altitudinem ab elevatione figura septuagesimæquarta, ac censentur erectæ & canalibus insertæ, quæ omnia representantur etiam figurâ septuagesimasecunda in *P* & *Q*. Velim observes quantum elevetur tabulatum in principio *A*, in poscenio *D*, & in puncto theatri *O*. Similiter notare oportet elevationem singularum scenarum, quæ propter obliquitatem canalium flectuntur introrsum : iccirco lineæ *BL*, *KI*, partis *C*, non videntur parallelæ ad lineam plani, ut re ipsa sunt ; ac visualis *LF* non tendit ad punctum oculi *O*, sed ad punctum *F*. Si autem excessus apparens, quem recta *BK* habet in summo & imo supra

rectam *LI* transferatur in partem *E* scenarum, (iudem excessus desumi etiam possunt ex figura septuagesimæquarta) ac ducantur rectæ *LG*, *IH*, habebuntur lineæ apparenter parallelæ ad lineam plani. Si fiat recta *LO*, quæ cum *LG* faciat angulum *GLO* æqualem angulo *BLF*, eadem *LO* tendet exactissimè ad punctum *O* oculi, eaque utendum erit ut visuali.

In *P* supponimus scenas *M* & *N* jacere super pavimento unas super aliis, ac duas lineas *RT* habere distantiam eandem cum duabus *LI*, & ita in reliquis scenis. Ubi notandum est, lineas *RS*, *TV*, easdem esse cum lineis *LG*, *IH*, scenarum *E* : nihilominus lineas *RS*, *TV*, non esse parallelas, quum tamen *LG*, *IH*, videantur parallelæ. Proinde, si fiat recta *RL*, & anguli *SRL*, *GLO*, sint æquales, rectâ *RL* utendum erit tanquam visuali, in *L* erit punctum accidentale oculi pro pingendis scenis *N*, ac lineæ *RS*, *TV*, habebuntur ut parallelæ : id autem quod superest in telario ultra tales lineas, pro nihilo computabitur, ibique pingetur aer aut aliquid aliud. Punctum accidentale oculi pro pingendis scenis *M* erit in *I*.

The Seventy-fifth FIGURE.

The Elevation of Scenes in Front, and how the oblique Scenes are made to appear direct.



THE Scenes in *S* have their Breadth from the Plan of the Seventy-third Figure, and their Height from the Elevation of the Seventy-fourth Figure ; and are suppos'd to stand perpendicularly in their Grooves ; all which is also represented in *P* and *Q* of the Seventy-second Figure. I would have you observe, how much the Floor rises, from its Edge *A*, to the Poscenio *D*, and to the Point of the Theater *O*. You should also note the Elevation of each Scene, which, by reason of the Obliquity of the Grooves, turn inward : Wherefore the Lines *BL*, *KI*, of the Part *C*, do not seem Parallels to the Ground-line, as they really are ; and the Visual *LF* tends

not to the Point of Sight *O*, but to the Point *F*. But if the seeming Excess, which the Line *BK* has at top and at bottom, above the Line *LI*, be transferr'd on the Side of the Scenes *E*, (which Excess may also be taken from the Seventy-fourth Figure) and you draw the Lines *LG*, *IH* ; these Lines will appear Parallels to the Line of the Plan. Then drawing the Line *LO*, so as to make the Angle *GLO* equal to the Angle *BLF*, the said *LO* shall tend directly to the Point of Sight *O* ; and serve for a visual Line.

In *P*, I suppose the Scenes *M* and *N* to lie one upon another on the Floor, and the two Lines *RT* to have the same Distance as the Lines *LI* ; and so of the others. Where you are to take Notice, that the Lines *RS*, *TV*, are the same with the Lines *LG*, *IH*, of the Scenes *E* : and that the Lines *RS*, *TV*, are not Parallels ; altho' *LG*, *IH*, seem to be so. Therefore, if you draw the Line *RL*, so that the Angles *SRL*, and *GLO*, be equal ; the Line *RL* shall serve as a Visual, and *L* shall be the accidental Point of Sight, for painting the Scenes of the Side *N* ; and the Lines *RS*, *TV*, shall be us'd as Parallels. What remains on the Frame, beyond those Lines, is to be reckon'd as nothing ; but you may paint there Air, or what you please. The accidental Point of Sight for painting the Scenes of the Side *M*, is *I*.

FIGURA Septuagesimasexta.

Modus delineandi exemplar scenarum.



TERUM delineavimus scenas erectas super tabulato; in B nudas, in A depictas, additis projecturis coronicum & aliorum ornamentorum: Deformatio scenarum A eruitur methodo consuetâ ex vestigio C, in quo videbis lineam plani deorsum protractam. Vestigium autem geometricum est in D.

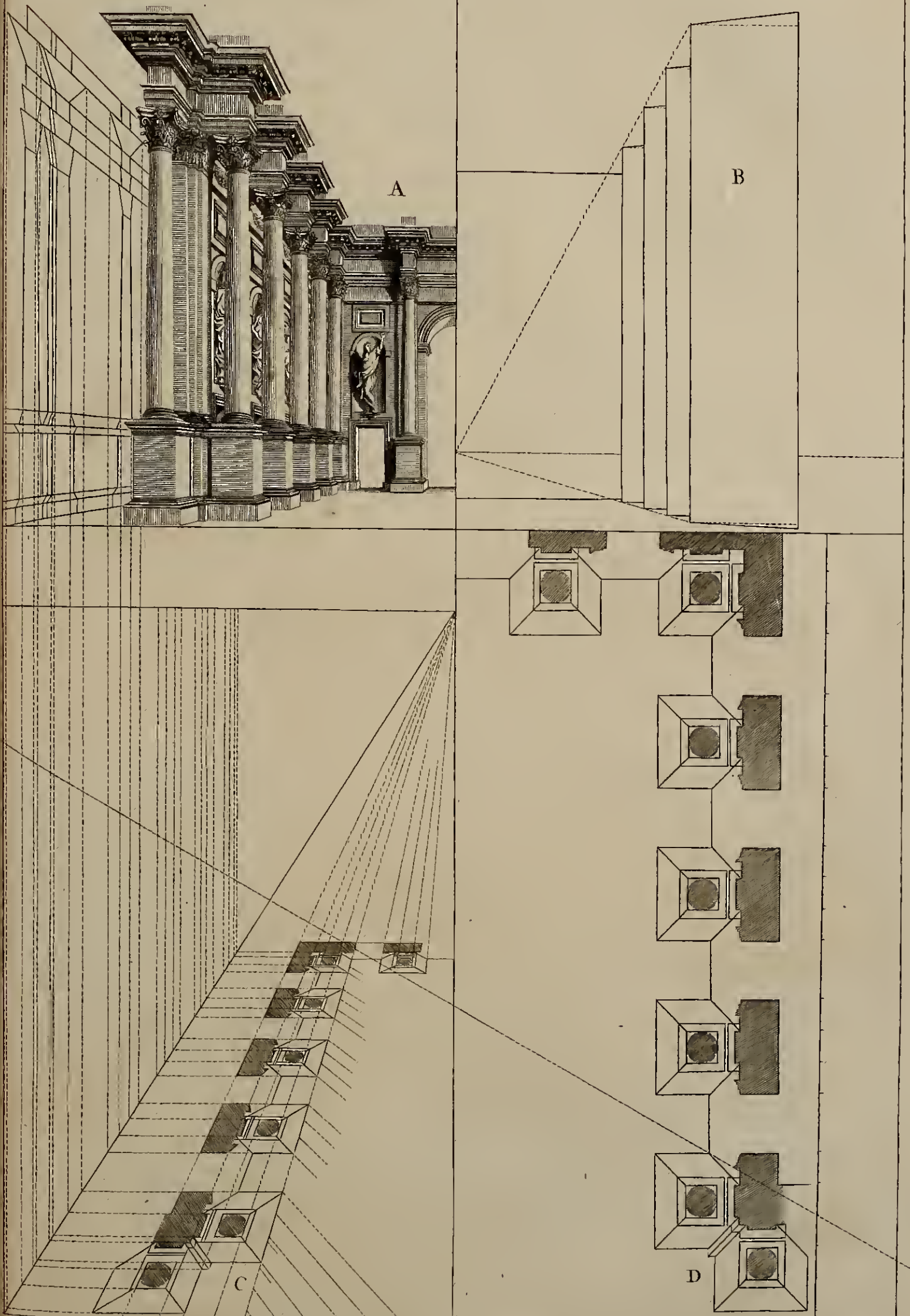
The Seventy-sixth FIGURE.

The Manner of delineating the Designs of Scenes.



IN this Plate you have another Design of Scenes erected on the Floor; the naked Scenes are B; the painted ones A; with the additional Projectures of Cornices and other Ornaments. The Draught of the Scenes A is produc'd from the Plan C, after the usual Manner; in which you may observe the Ground-line to be lower than its true place, for the greater Distinction of the Parallels. The Geometrical Plan is D.

FIG LXXVI





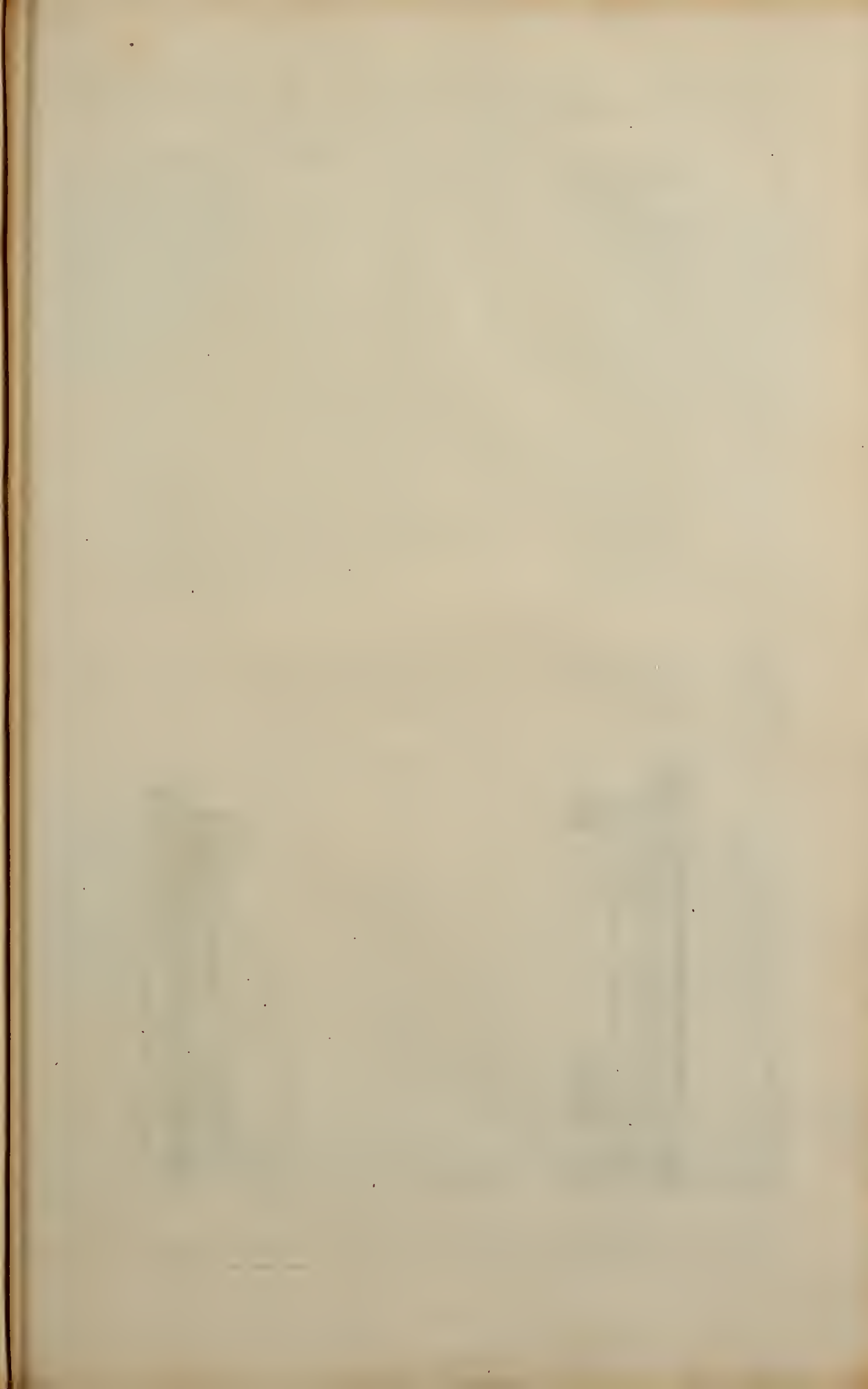


FIG. LXXVII.

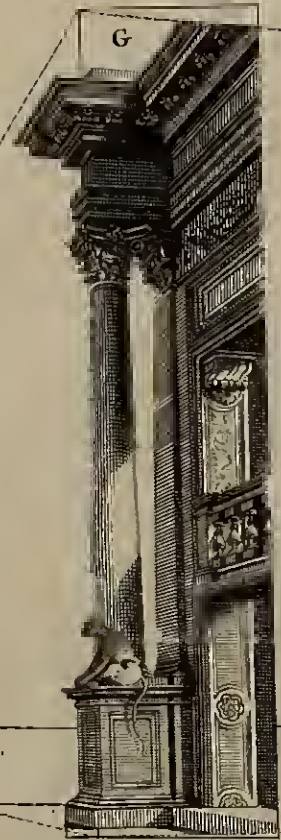
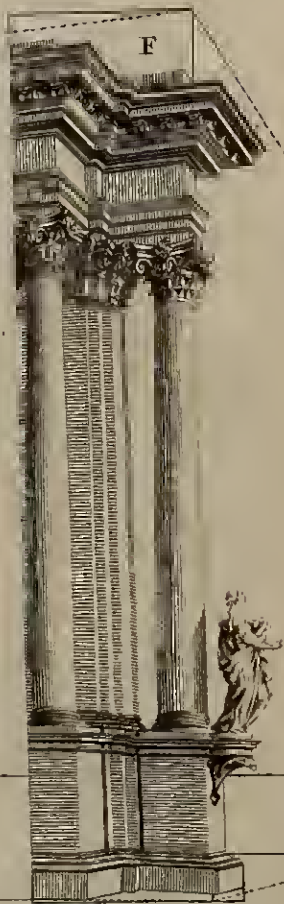
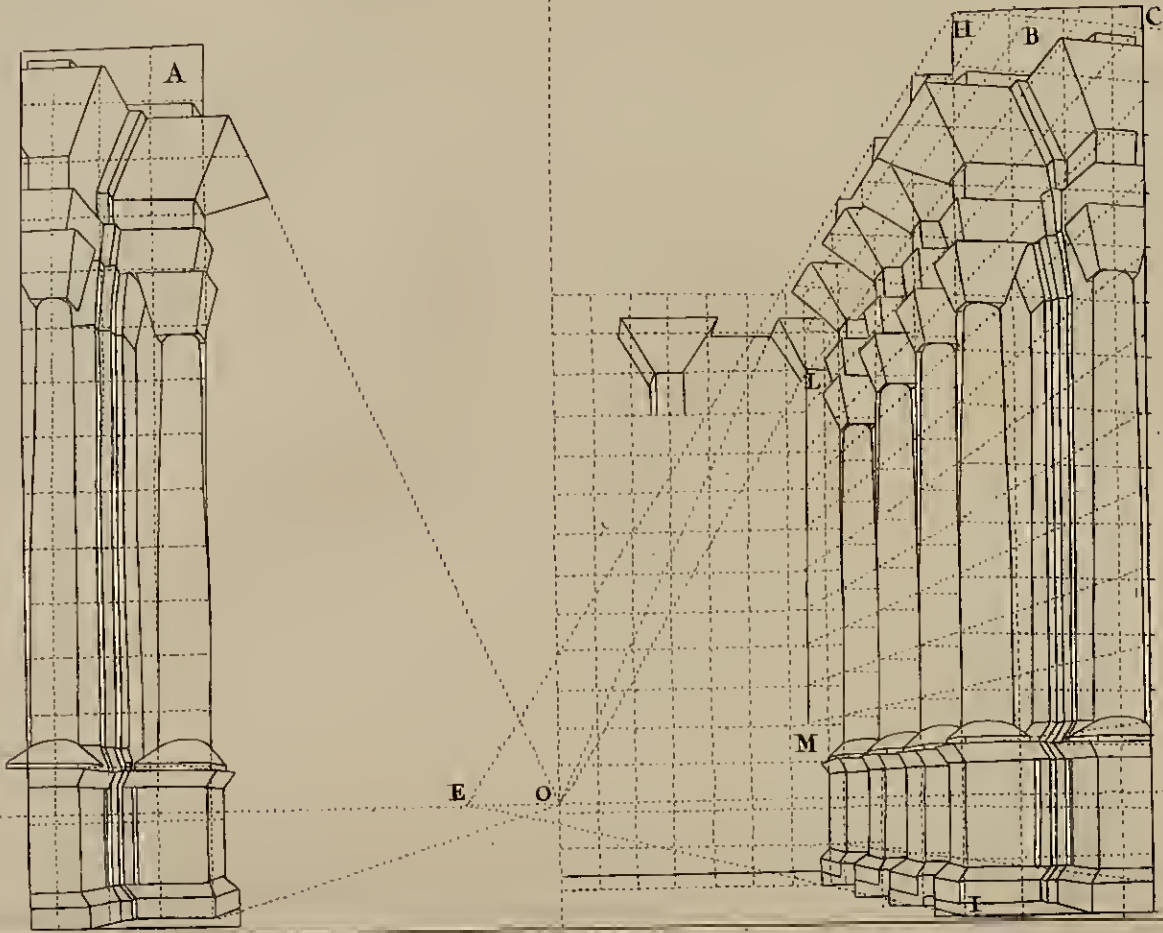


FIGURA Septuagesimaseptimā.

Modus reticulandi & pingendi scenas theatri.



POSTQUAM in pavimento exactissimè disposueris tum poscenium, tum ex ordine scenas reliquas, unam alteri incumbentem, ut figurâ septuagesimaquintâ declaravimus, fiet linea horizontalis, in qua notanda sunt tria puncta perspectivæ, unum in O usui futurum in pingendo poscenio, ac duo reliqua hinc inde, singula videlicet pro scenis partis oppositæ. Jam supponendo quòd in parvo exemplari A primæ scenæ facta fuerit reticulatio per quadrata perfectâ; proportionalis divisio fiet tum in recta HI primæ scenæ B, tum in recta CD. Postea ex puncto E, per singula puncta divisionum rectæ HI, fient visuales, adhibendo funiculum colore nigro imbutum; earumque ope, ut figura ostendit, reticulare oportebit scenam B, tum remotâ ea scenam illi subjektâ, & eodem modo aliam & aliam; ac demum per divisiones quas in recta LM faciunt visuales ex puncto E, absolvetur reticulatio poscenii, cujus quadrata esse debent perfectâ, secus quadrata scenarum. In parte inferiori pagina, duæ scenæ G & F ostendunt ornamenta quæ in scenis depingi possunt. Velim autem observes, tum lineas transversas coronicum, quæ non sunt invicem parallelæ, tum visuales, quæ tendunt ad puncta opposita. Nam ejusmodi lineæ continent duas peculiâres difficultates projectionum theatralium; easque ut superes, exactè servandæ sunt regulæ quas declaravimus.

The Seventy-seventh FIGURE.

The Manner of making the Net-work or Squares, and painting the Scenes of Theaters.



AFTER you have with great Exactness dispos'd the Poscene on the Pavement, and the others in order one upon another, as was mention'd in the Seventy-fifth Figure; draw the horizontal Line, and mark therein three Points of Sight: That in O, for the Use of the Poscene; and the Points on the Sides, for the Service of the opposite Scenes respectively. Then, supposing that the Net-work of the small Draught of the first Scene A, consists of perfect Squares; transport the same Divisions both on the Lines HI and CD of the first Scene B; and with a black Line strike the Visuals from the Point E, by the Points of the Divisions of HI; and by the Help of those Visuals make the Net-work of the Scene B, as is done in the Figure. When that's done, lay it aside; and do the next in the same manner; and so of the others. Lastly, by the Divisions, which the Visuals from the Point E make on the Perpendicular LM, finish the Net-work on the Poscene, which consists of perfect Squares, though that of the Scenes does not. The two Scenes of the lower part of the Plate, G and F, shew what Diversity of Ornament the Painter may introduce. I would have you also take particular Notice, both of the transverse Lines of the Cornice, which are not Parallels to each other; and of the Visuals which are directed to their opposite Points: because in these two Particulars lies the greatest Difficulty of describing Theatrical Designs; for the surmounting which, it's absolutely necessary, that you carefully regard the Rules hitherto deliver'd.

FIGURA Septuagesimo octava.

De projectionibus horizontalibus.



MEMADMODUM facilius est deformatio columnarum jacentium, quam columnarum erectarum; (nam lineæ quæ in istis sunt perpendiculares, in illis sunt visuales, ac nullus circulus amittit suam formam) ita projectiones horizontales, quas in laquearibus delineare necesse est, contra quam Pictores imaginantur, expeditiores & faciliores sunt verticalibus, quas hucusque tractavimus. Nam ut stylobatæ & columnæ appareant erectæ, pingendæ sunt veluti jacentes.

Deformationes horizontales auspicamur à mutulis, quia columnæ ac stylobatæ indentidem iis imponuntur, ut magis in prospectu sint. Ob diversitatem verò quam habet latus mutuli à sua facie, utriusque delineationem geometricam seorsim in hac figura exhibemus.

The Seventy-eighth FIGURE.

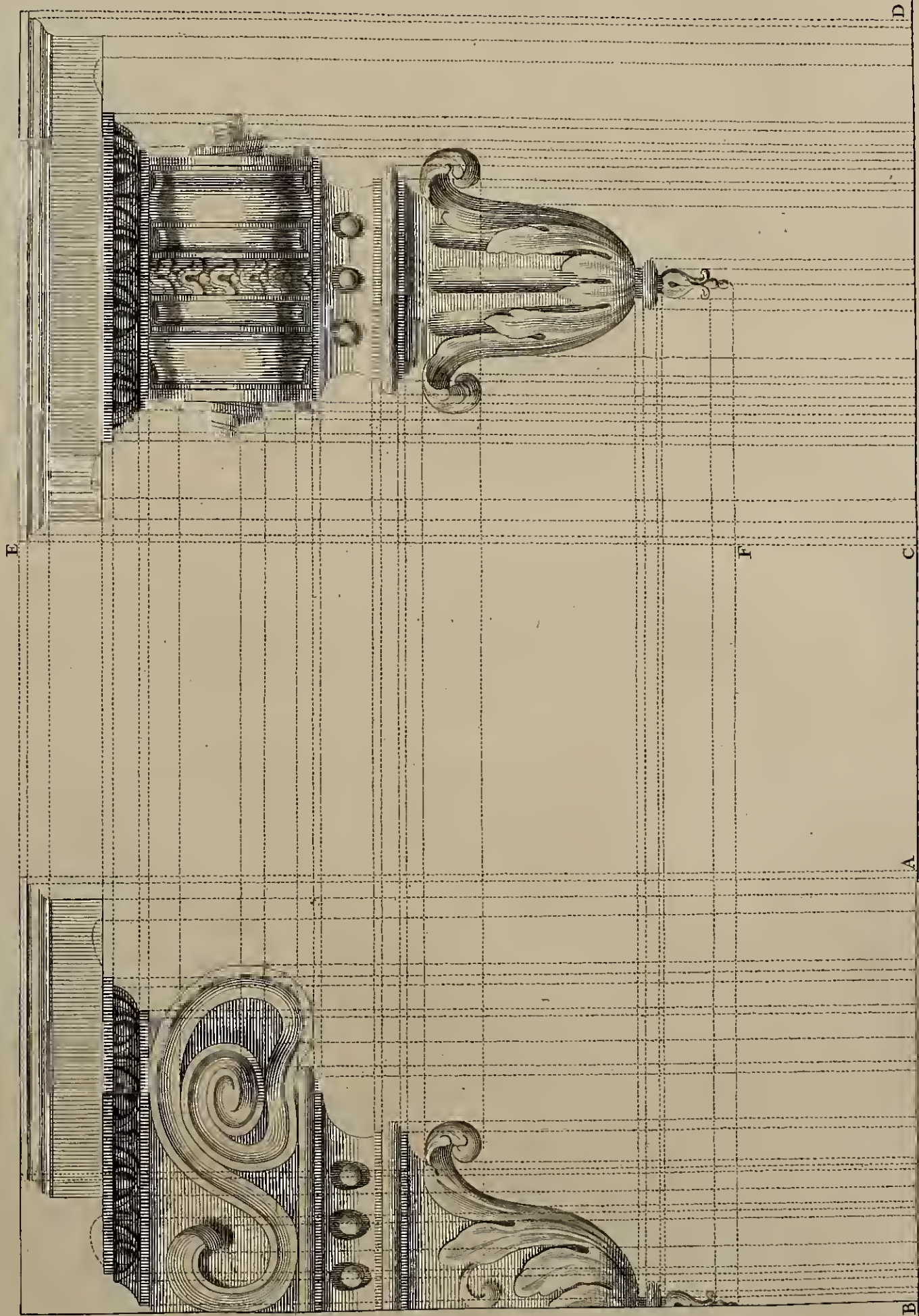
Of horizontal Perspective.

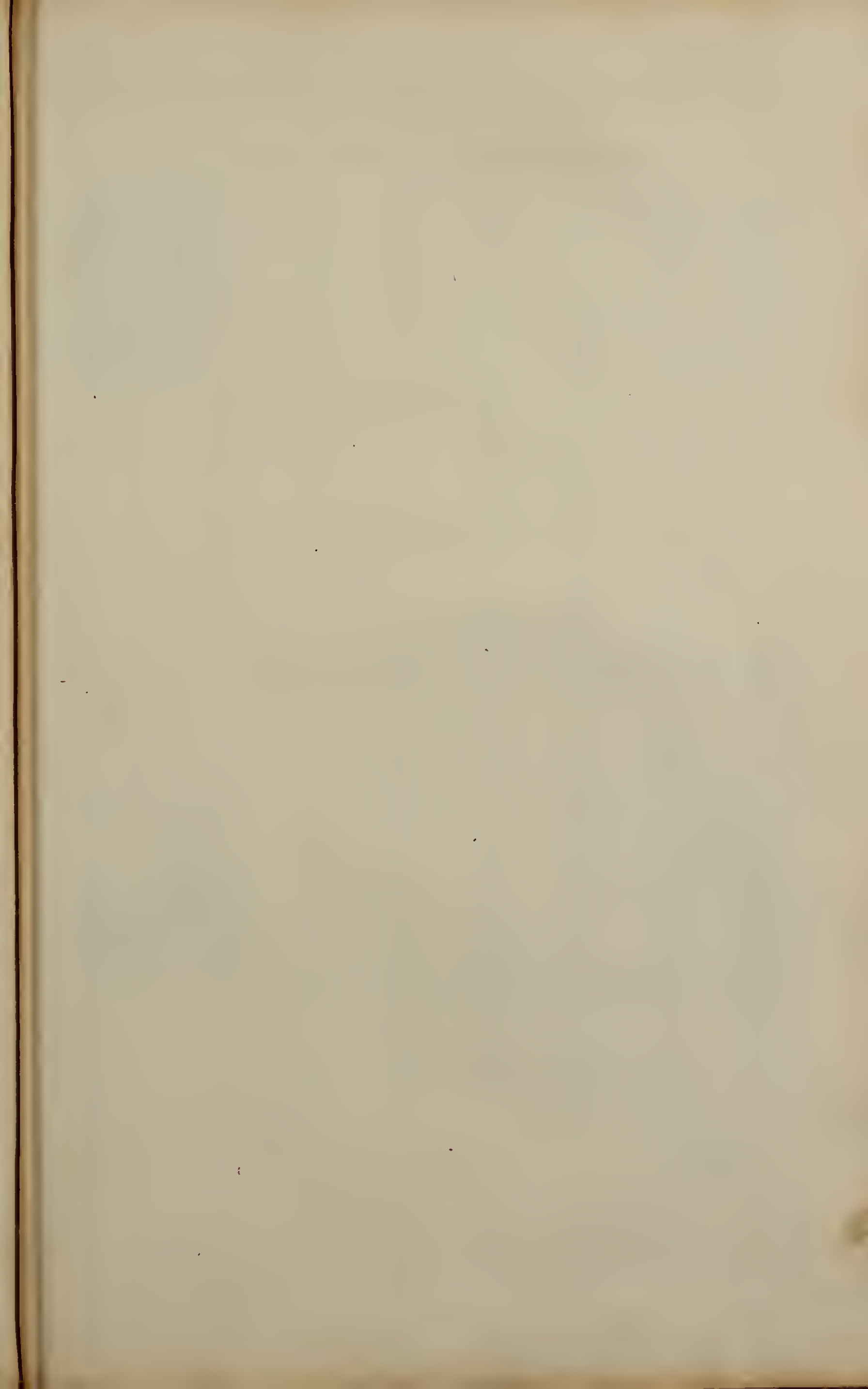


It is easier to describe in Perspective Columns lying on the ground, than those that are erect, (the Lines in these last being Perpendiculars, which in the former are Visuals, wherein no Circle loses its Form) so the horizontal Projections of Perspective, proper for Ceilings, contrary to the Judgment Painters usually make, are perform'd with more Ease and Expedition, than the vertical, which we have hitherto treated of; forasmuch as the Pedestals and Columns that must appear erect, are painted as if lying on the ground.

I have usher'd in these horizontal Designs with those of Corbels, because, for setting the Pedestals and Columns more in View, they generally seem to be supported by them. And the Side of this Corbel being different from its Face, I have here inserted a Geometrical Description of each distinct.

FIG: LXXVIII.





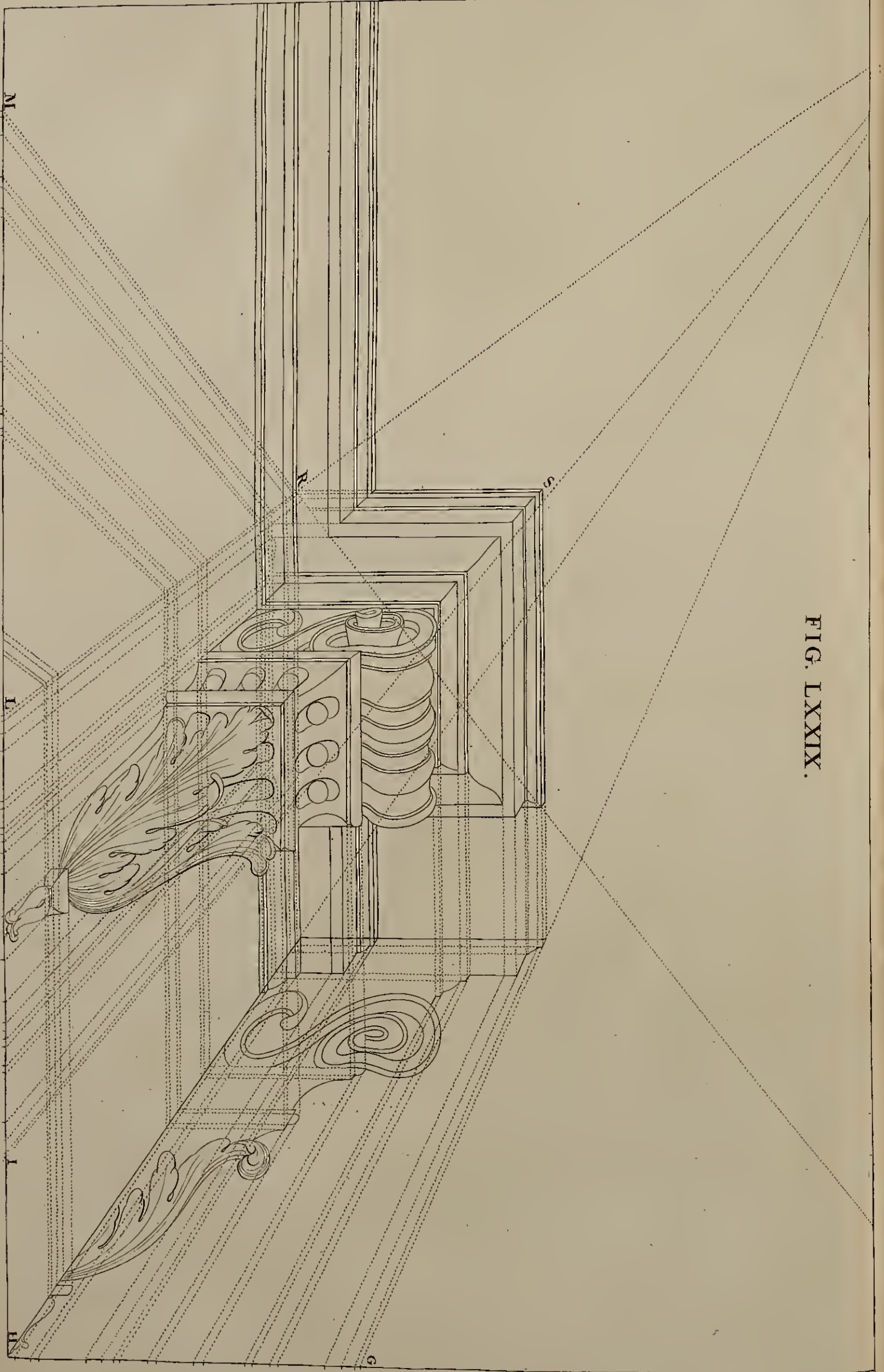


FIG. LXXIX.

FIGURA Septuagesimanona.

Projectiones vestigii & elevationis mutuli.



ACIES mutuli quam delineavimus figurâ septuagesimaoctavâ, gerit hic munus vestigii; latus verò gerit munus elevationis; ut ostendunt lineæ occultæ, quæ ex divisionibus faciei tendunt ad punctum oculi, ex divisionibus lateris tendunt ad punctum distantie (puncta oculi ac distantie in hac & sequentibus figuris cadunt extra paginam.) Per sectiones harum linearum ducuntur lineæ quæ terminant singulas partes vestigii deformati; hujusque adjumento ducitur elevatio lateris, ac methodo consuetâ latitudines & longitudines mutuli solidi eruuntur ex vestigio, altitudines ex elevatione. Hic & deinceps nomina longitudinis & altitudinis usurpamus, veluti planum cujuslibet perspectivæ esset verticale; in quâ suppositione, *IL* esset latitudo mutuli, *SR* altitudo, *RL* longitudo: quum *SR* reverà sit longitudo, *RL* altitudo. Ad faciliorem descriptionem hujus figuræ observandum est, rectis *IL*, *LM*, *GH*, hujus paginæ inesse divisiones rectarum *DC*, *FE*, *AB*, figuræ septuagesimaoctavæ.

The Seventy-ninth FIGURE.

The Plan and Elevation of a Corbel in Perspective.



THE Face of the Corbel describ'd in the Seventy-eighth Figure, in this does the Office of a Plan; and the Side serves here for the Elevation; as is plain from the occult Lines, which from the Divisions of the Face tend to the Point of Sight, and from those of the Side tend to the Point of Distance; both which Points, in this and the succeeding Figure, fall without the Plate. From the Intersections of these Lines are drawn others, that determine each Part of the Perspective-Plan; by means of which, the Elevation of the Side being also form'd; the Breadths and Lengths of the solid Corbel are taken, as usual, from the Plan, and the Heights from the Elevation. Here and henceforward, the Terms of Length and Height are made use of, as though the Plan of each Perspective were vertical; according to which Supposition, *IL* is the Breadth of the Corbel, *SR* the Height, and *RL* the Length; whereas in reality *SR* is the Length, and *RL* the Height. For the more ready Description of this Figure you will do well to observe, that the Lines *IL*, *LM*, *GH*, of this Plate, bear the same Divisions as *DC*, *FE*, *AB*, of the Seventy-eighth Figure.

FIGURA OCTOGESIMA.

Horizontalis projectio mutuli inumbrati.



N hac figurâ suas umbras mutulo addidimus : eumque si in altum supra oculum elevaveris, & ex distantia quam ipsi dedimus suspexeris ; miraberis profectò, in alium longè concinniorrem subito mutatum fuisse.

ignol
hinc

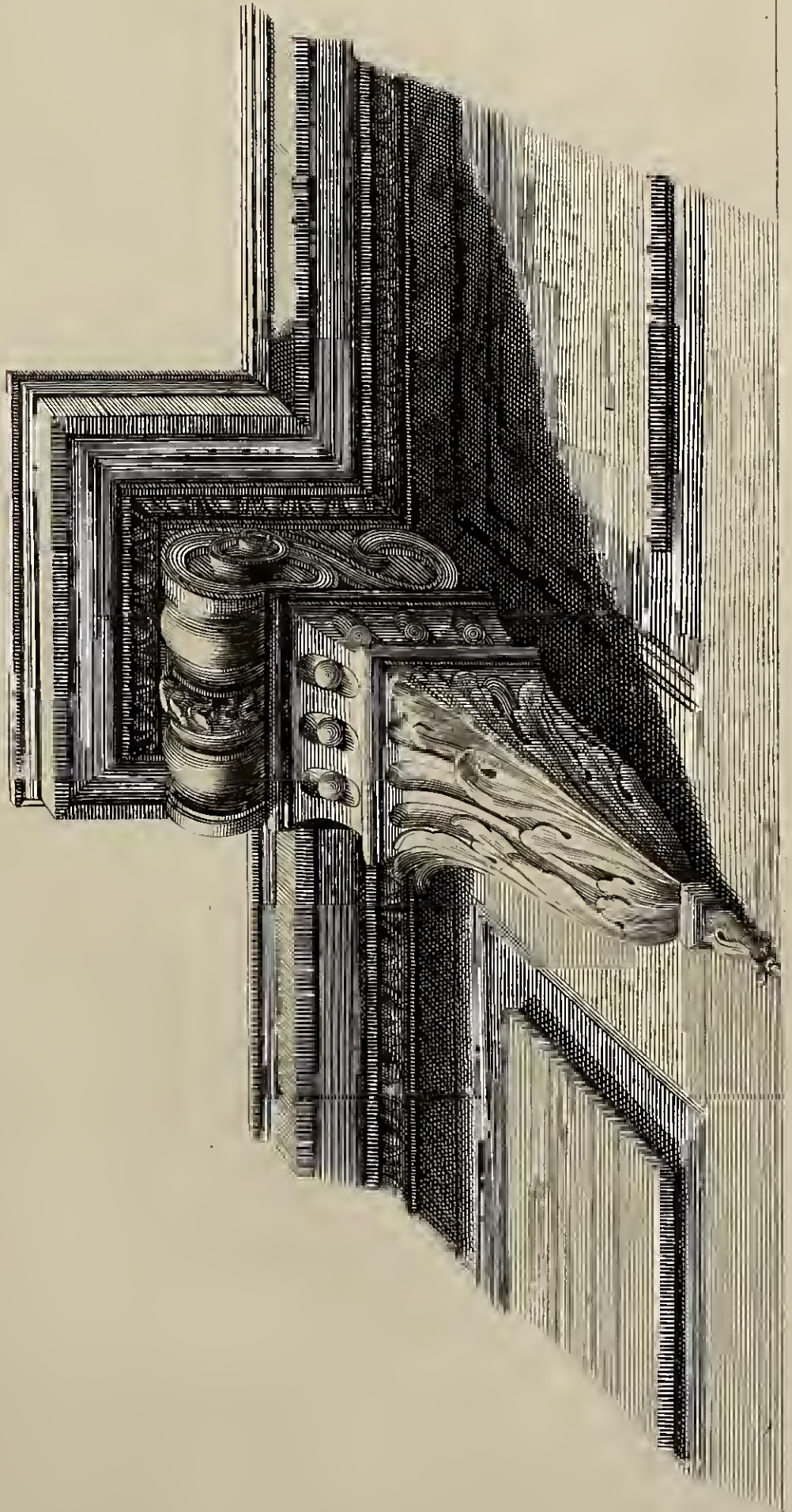
The EIGHTIETH FIGURE.

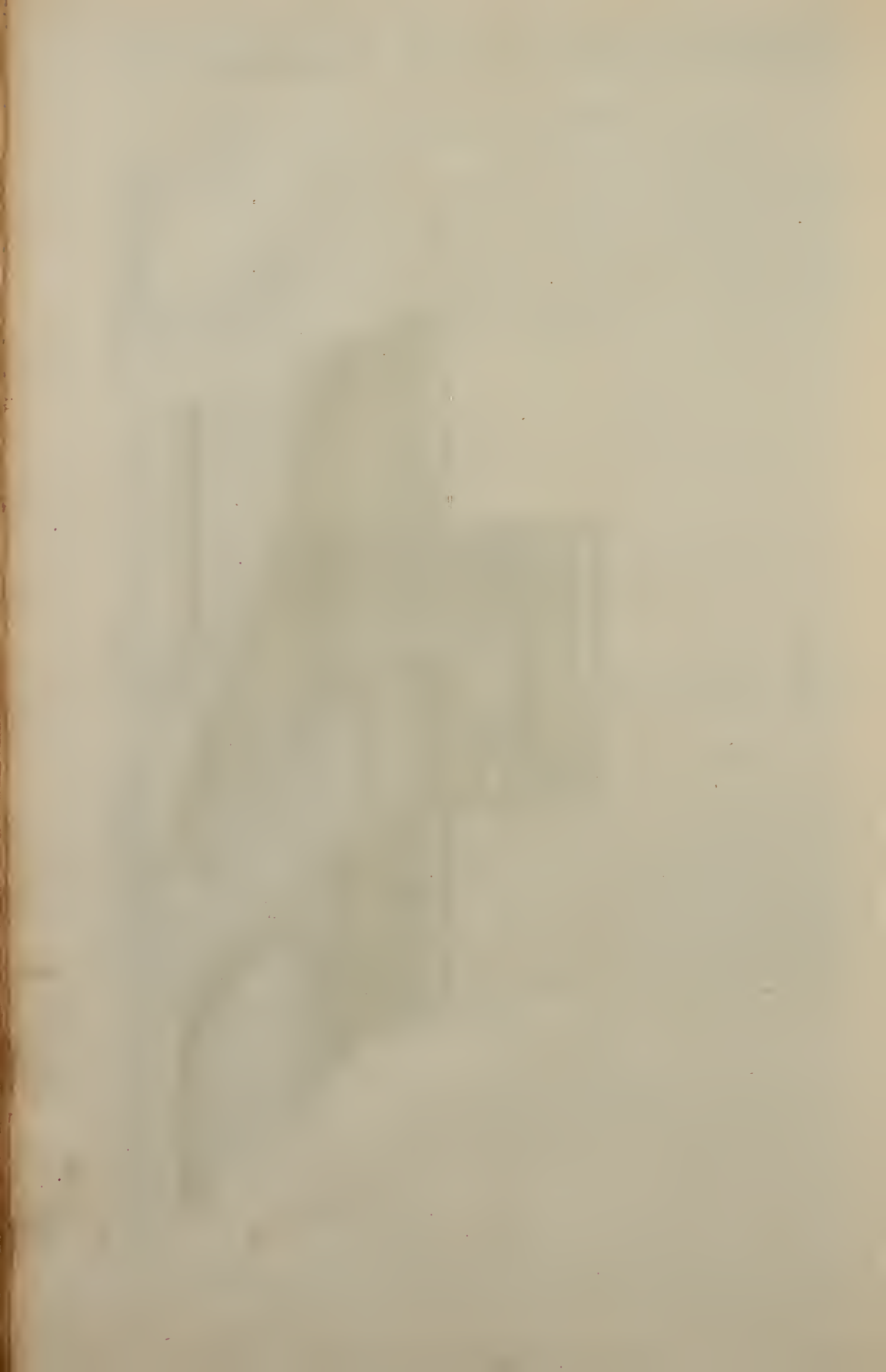
The Horizontal Projection of a shaded Corbel.



N this Figure you have the Corbel finish'd with its proper Shades ; which, if plac'd above the Eye, and beheld from the Distance here assign'd it ; you'll be strangely surpriz'd at the sudden and most agreeable Alteration you'll find therein.

FIG. LXXX.





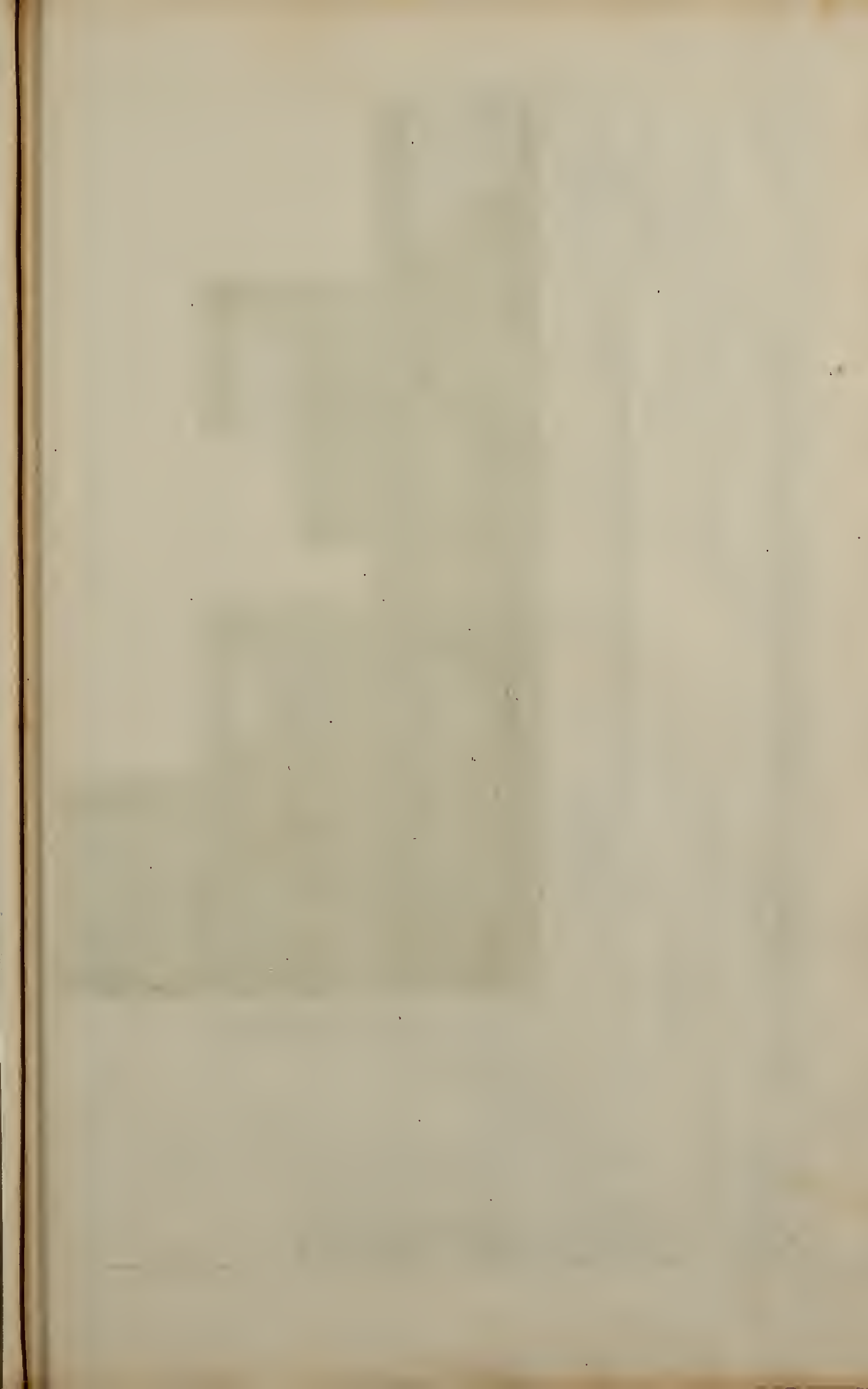


FIG. LXXXI.

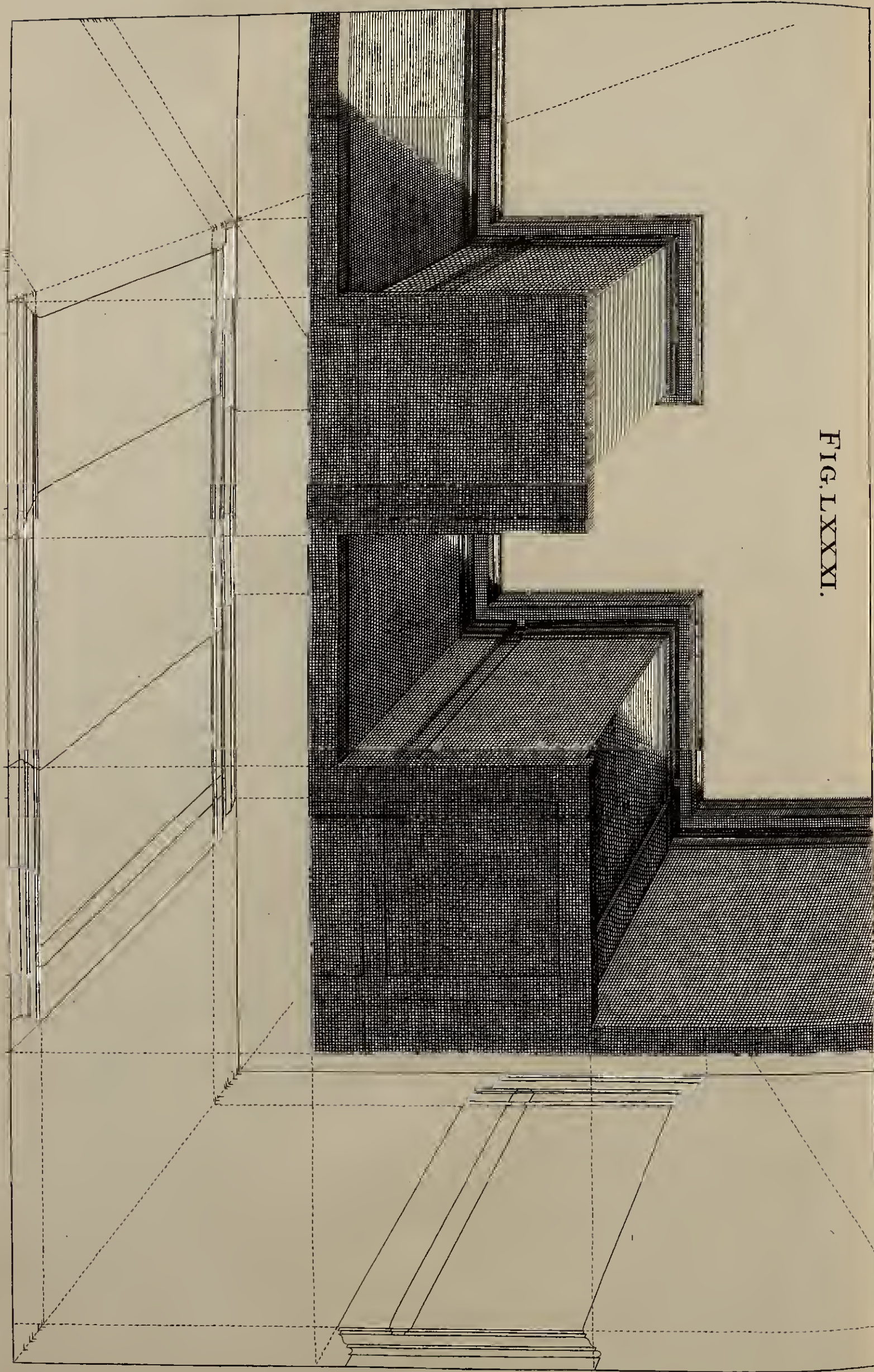
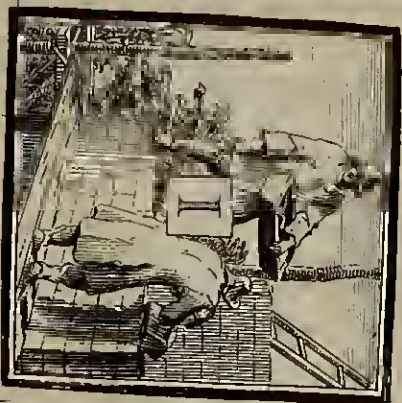


Figura Octogesima prima.

Stylobatæ Corinthii horizontaliter contracti.



N deformandis hiscæ Stylobatis, usi sumus projectione vestigiis elevationis, quam exhibet figura duodecima; ut figuram illam cum istâ conferenti manifestissime constabit. Porro Stylobatas pingi solere incumbentes mutulis, diximus figurâ septuagesima octavâ.

The Eighty-first Figure.

Corinthian Pedestals in an Horizontal Perspective.



N delineating these Pedestals, I have made use of the Plan and Upright put into Perspective in the Twelfth Figure; as will evidently appear, by comparing that Figure with this. I have already mention'd, in the Seventy-eighth Figure, that in painting these Pedestals, they are generally suppos'd to be upheld by Corbels.

Figura Octogef. secunda.

Columna Corinthia horizontaliter deformata.



ESTIGIUM & elevatio stylobata, quem delineavimus figurâ duodecimâ, suppeditat mensuras pilarum hoc loco deformandarum, ut ex eis eruatur contractio columnæ.

Huic autem soli suas umbras addidimus, ut clarior apparet modus & artificium totius operationis. Ex his vides, quadrata & circulos in perspectivâ horizontali omninò retinere suam figuram, eamque dumtaxat restringi paulatim & coarctari: quicquid in contrarium & verbis & pennicillo docuerint Pictores nonnulli.

Eighty-second FIGURE.

A Corinthian Column in Horizontal Perspective.



THE Plan and Elevation of the Pedestal delineated in the Twelfth Figure, gives also the Measures for reducing these Pilasters into Perspective; from which

the Contraction of the Column is taken. I have shadow'd only this last, that the Manner of the whole Work might be the more conspicuous. By this you see the Squares and Circles in Horizontal Perspective always retain their Figures, without any Alteration, save that of being gradually diminish'd and made less; notwithstanding what some Painters have taught and practis'd to the contrary.

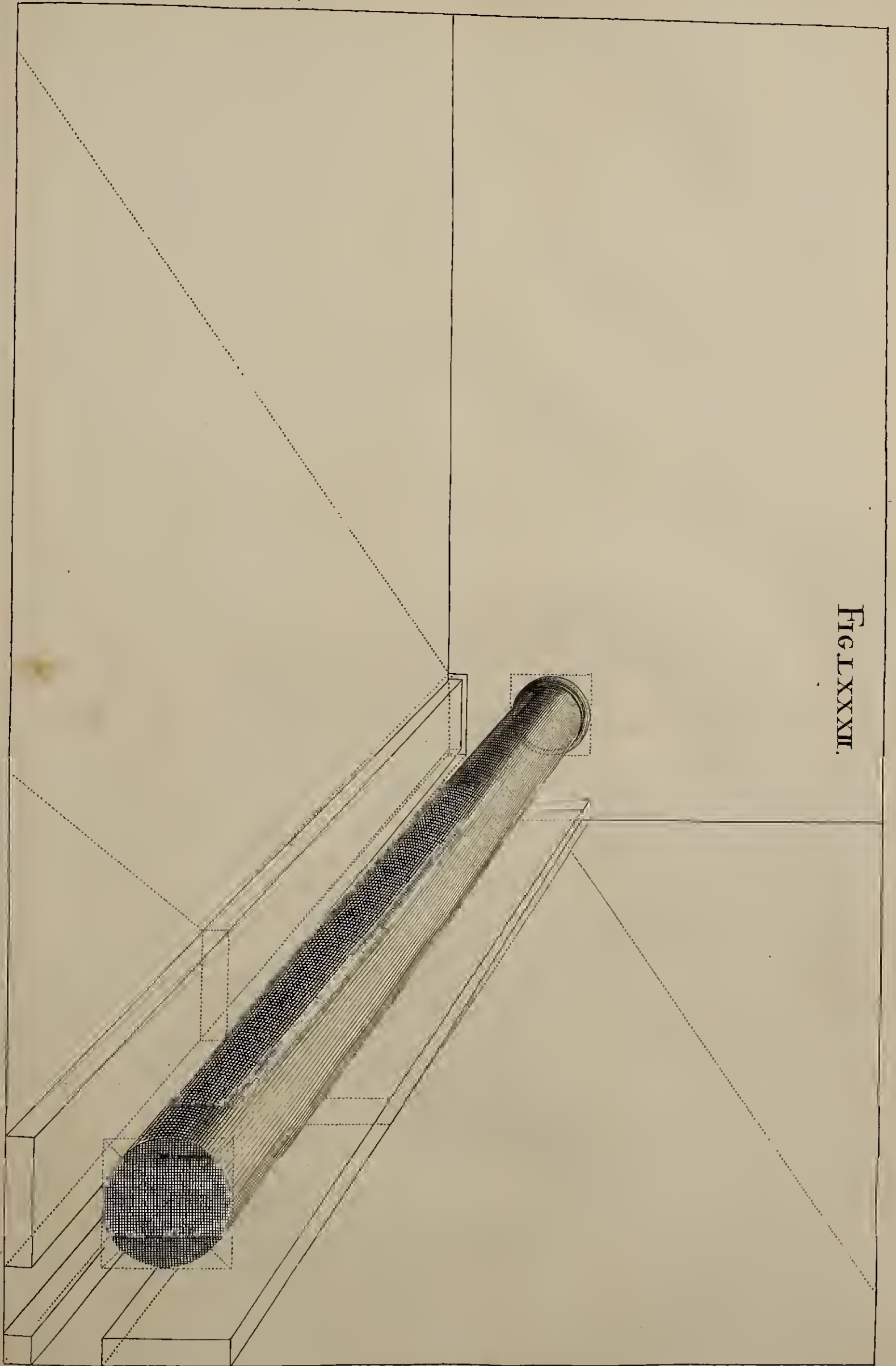
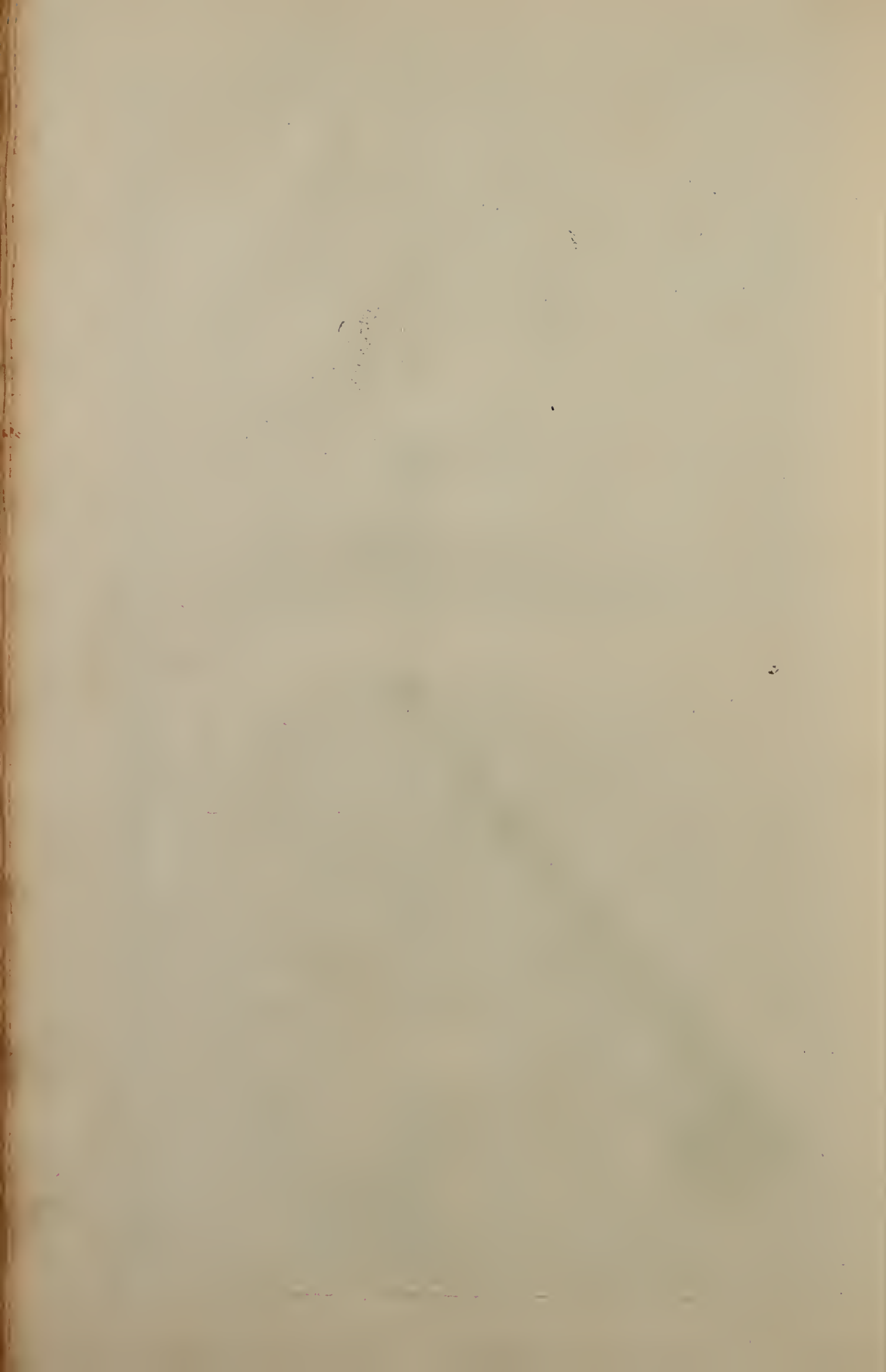
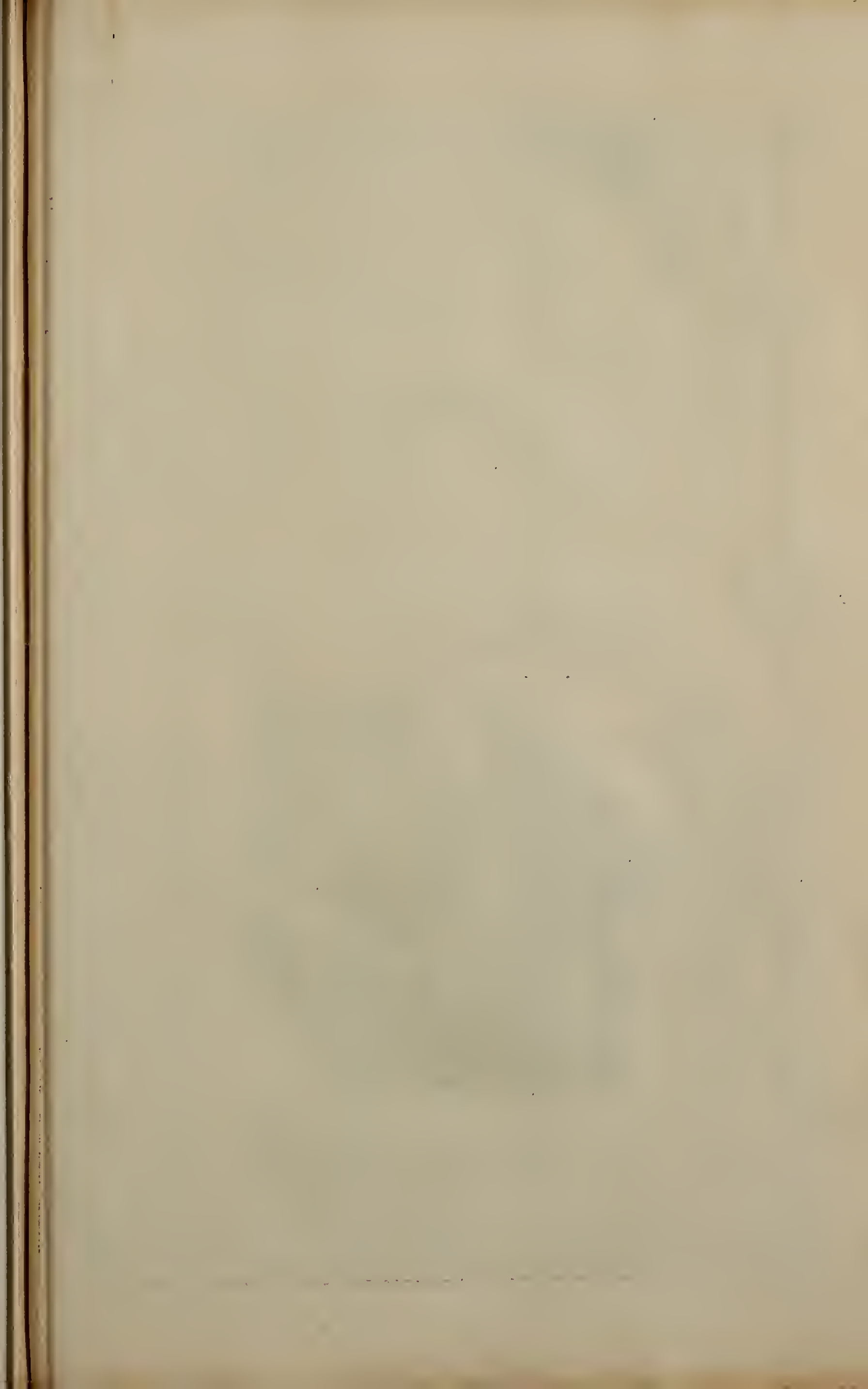


FIG. LXXXII.





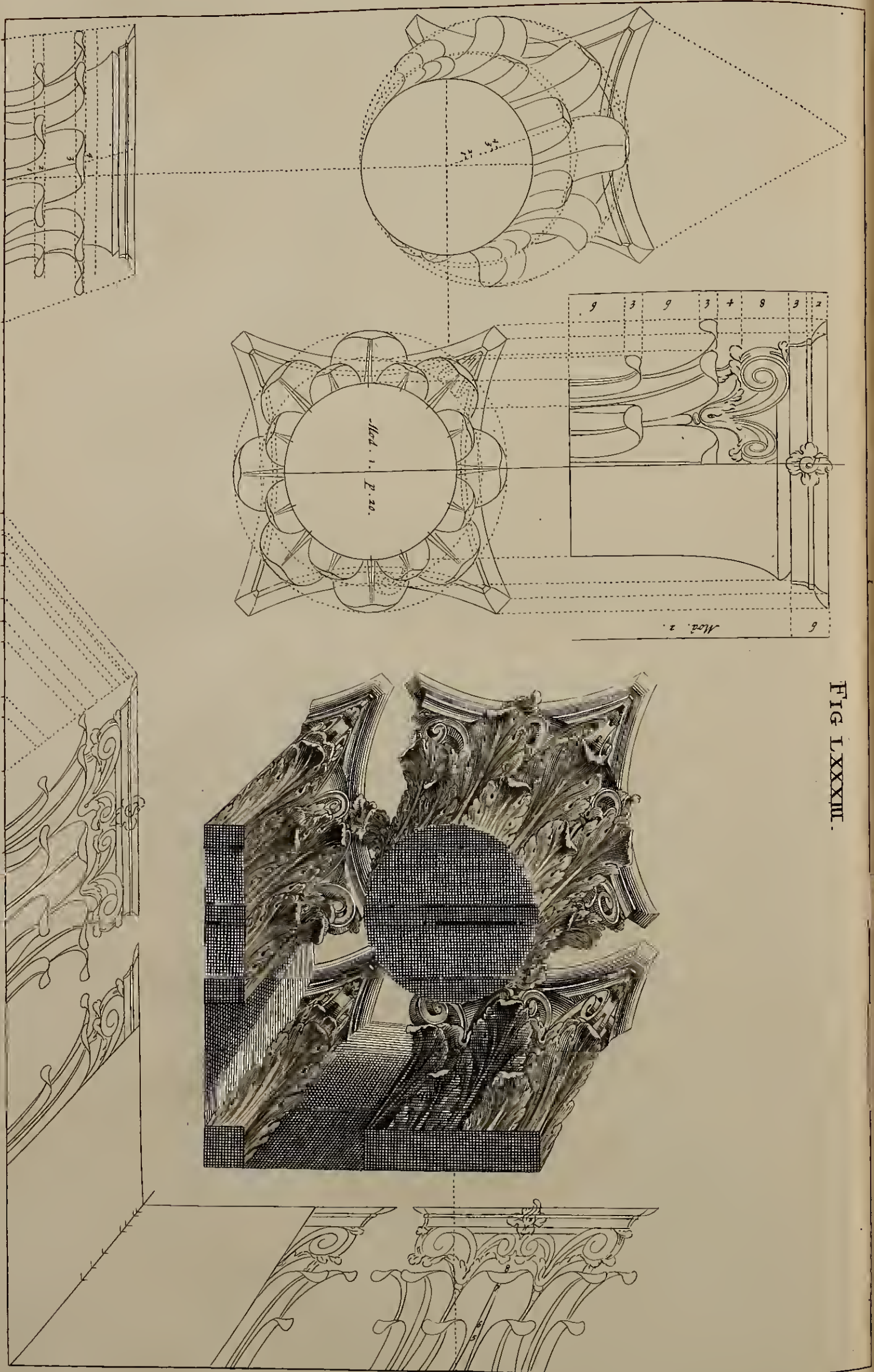
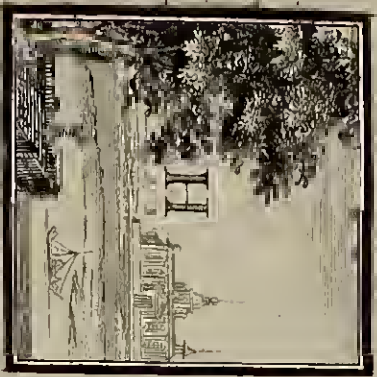


FIG LXXXIII.

Figura Octogesimaertia.

Capitella Corinthia horizontaliter contracta.



ABES in hac paginâ deformationes vestigiî & elevationis capitelli Corinthii, quas desumpsimus ex delineationibus geometricis, transferendo mensuras earum in lineas plani AB, & elevationis AC, ita ut facillimè dignosci possit unde nascantur singulæ partes capitellorum nitidorum. Nihil dubito quin deformationes horizontales sis experturus faciliores verticalibus quas dedimus figurâ vigesimaquartâ. Nam in horizontalibus gyrus foliorum circulis clauditur, quorum centra mutantur latitudines à suis vestigiis in punctis 1, 2, 3, 4; altitudines verò à capitellis elevationis in punctis 5, 6, 7, 8.

Eighty-third FIGURE.

A Corinthian Capital horizontally contracted in Perspective.



OU have in this Plate the Perspective both of the Plan and Elevation of the Corinthian Capital, drawn from the Geometrical Descriptions, by transferring their Measures into the Ground-line AB, and into that of the Elevation AC; so that you may readily discover from whence every part of the finish'd Capital is produc'd. I don't doubt but you'll experience these horizontal Perspectives to be much less difficult than the vertical propos'd in the Twenty-fourth Figure. For in these the Circuit of the Leaves is determin'd by perfect Circles, whose Centers take their Breadths from the Plan at the Points 1, 2, 3, 4; and their Heights from the Capitals of the Elevation, at the Points 5, 6, 7, 8.

Figura Octogesimaquarta.

Coronix Corinthia.



I faciendæ sint coronices que habeant angulos, elevatio geometrica A representabit unum latus, aliterum sectio B. Curandum est autem, ut crepidines partium, quas fingere volumus incumbere columnis, non obsint concinnae distributioni mutulorum. Ad contractionem elevationis A & sectionis B, in lineam plani EF & elevationis EG transferre oportet puncta diversarum latitudinum, quas habent in elevatione A unguis epistylii, & corone, ducendo ex iis lineas ad punctum oculi; in partem verò FH lineæ FE transferre oportet puncta longitudinis, ducendo lineas ad punctum distantie. Hac industriâ perficies utramque deformationem, quarum una geret minus vestigi, altera elevationis. Utrobique autem designabis lineas terminativas partium coronicis, ac sectionum C & D.

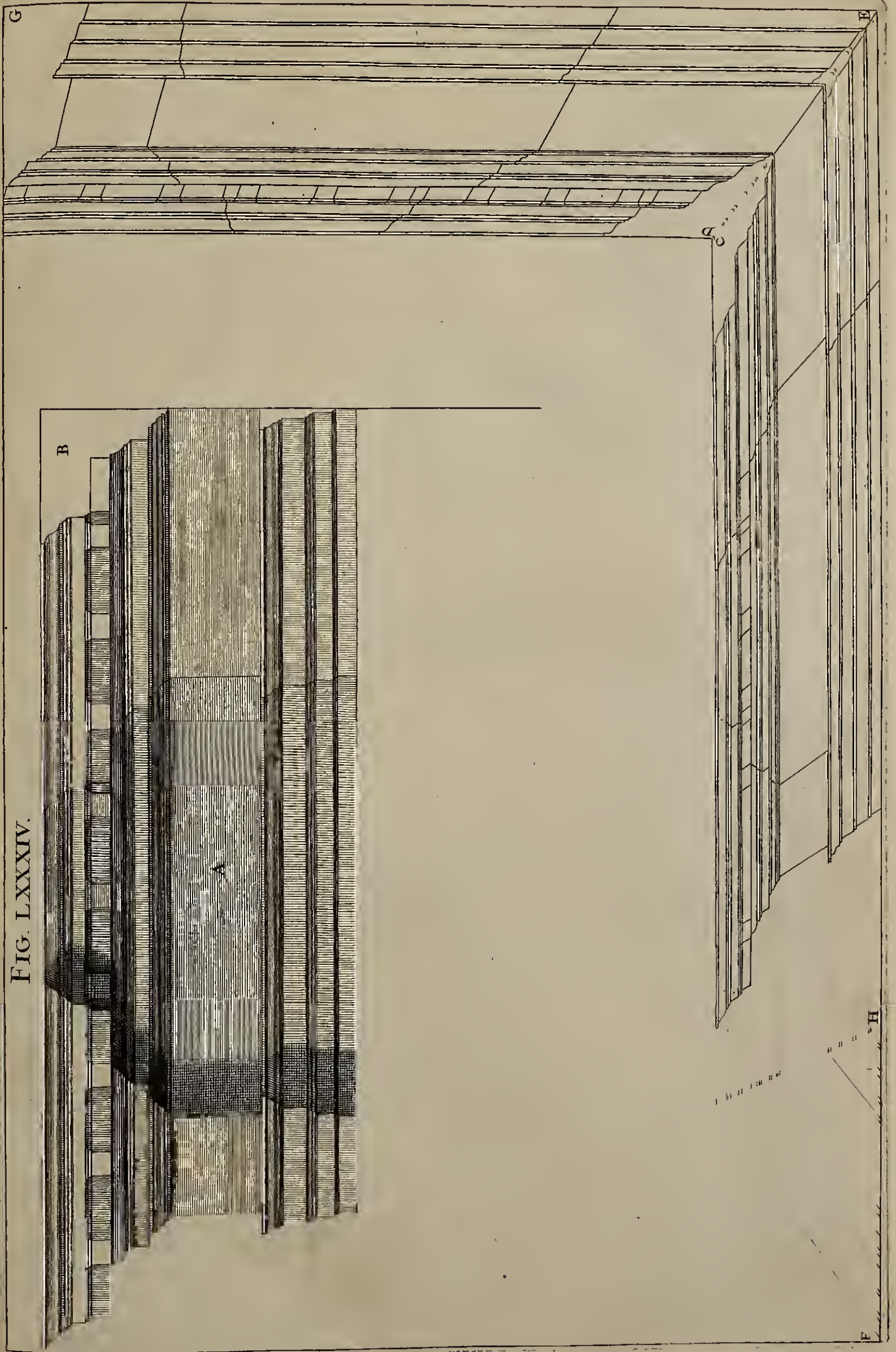
Eighty-fourth FIGURE.

A Corinthian Cornice.



F you are to describe Cornices having Angles, admit the Elevation A to represent one Side, and the Section B the other. But Care is to be taken, that the Breaks of those Parts which are suppos'd to be set directly over the Columns, do not obstruct the regular Distribution of the Modillions. For contracting into Perspective the Elevation A, and the Section B, you must transfer into the Ground-line EF, and into that of the Elevation EG, the Points of the several Breadths made by the Projectures of the Architrave, Frieze, and Cornice of the Elevation A; and from them draw Lines to the Point of Sight: Then on the Part FH of the Line FE, you must note the Points of Length, and draw Lines from them to the Point of Distance. By this Practice you complete these two Contractions, one of which does the Office of a Plan, the other that of an Elevation. It's also requisite, that you draw the Out-line of the Members of the Cornice on each side the Angle, & the Sections C and D.

FIG. LXXXIV.





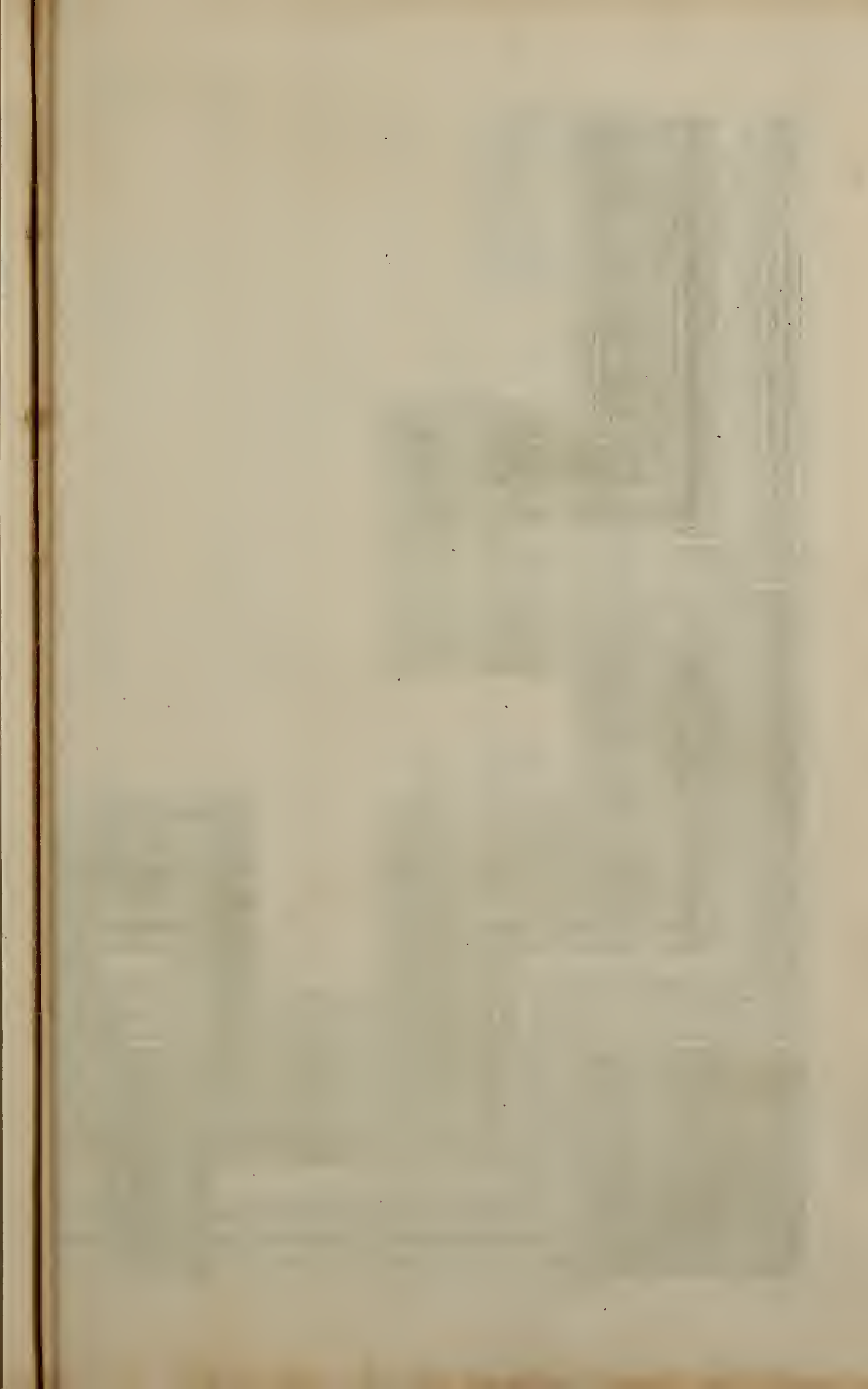
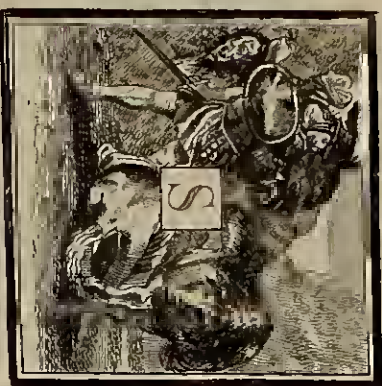


Figura Octogesimaquinta.

Coronix Corinthia horizontaliter
contracta.



OLIDITAS coronicis cum omnibus projecturis eruta est ex vestigio & elevatione figuræ octogesimaquarta. Hic autem finem imponimus partibus rerum, ad integra ædificia gradum facturi.

The Eighty-fifth Figure.

*A Corinthian Cornice in Horizontal
Perspective.*



THE Solidity of this Cornice, with all its Projectures, is deduc'd from the Plan and Elevation of the foregoing Figure. With this therefore I shall conclude the Description of Parts of things, and proceed to that of entire Structures.

Figura Octogesimafexta.

Horizontalis projectio columnæ.



OSTQUAM sigillatim descripsimus mutulum, stylolatam, columnam & coruicem, omnia ista coniungere placuit: ita clariùs apparebit quomodo disponere oporteat delineationes geometricas, ut ex eis eruantur projectiones horizontales.

Linea plani est CD, perpendicularis CI. In A est elevatio geometrica longitudinis columnæ, (supponimus columnam delinearî velui jacentem humi.) In B ejus vestigium geometricum, cum divisionibus latitudinis in lineâ ER. Puncta longitudinis transferentur in lineam plani CG, puncta altitudinis EC transferentur in CF, ducendo rectas ex divisionibus CG ad punctum distantie, ex divisionibus CF ad punctum oculi. Per sectiones verò visuales CO erigentur perpendiculara, & complebitur elevatio H, ex quâ eruetur columna nitida L.

Si super vestigio M formare placeat aliam columnam, ejus latitudines accipiente sunt ex columna B; ac sectio projicienda est in N, ut ex hac tanquam ex elevatione eruatur columna P. Si aliam columnam in angulo addere libitum fuerit, ope sectionum HN facillè illam complebis.

The Eighty-sixth Figure.

A Column in horizontal Perspective.

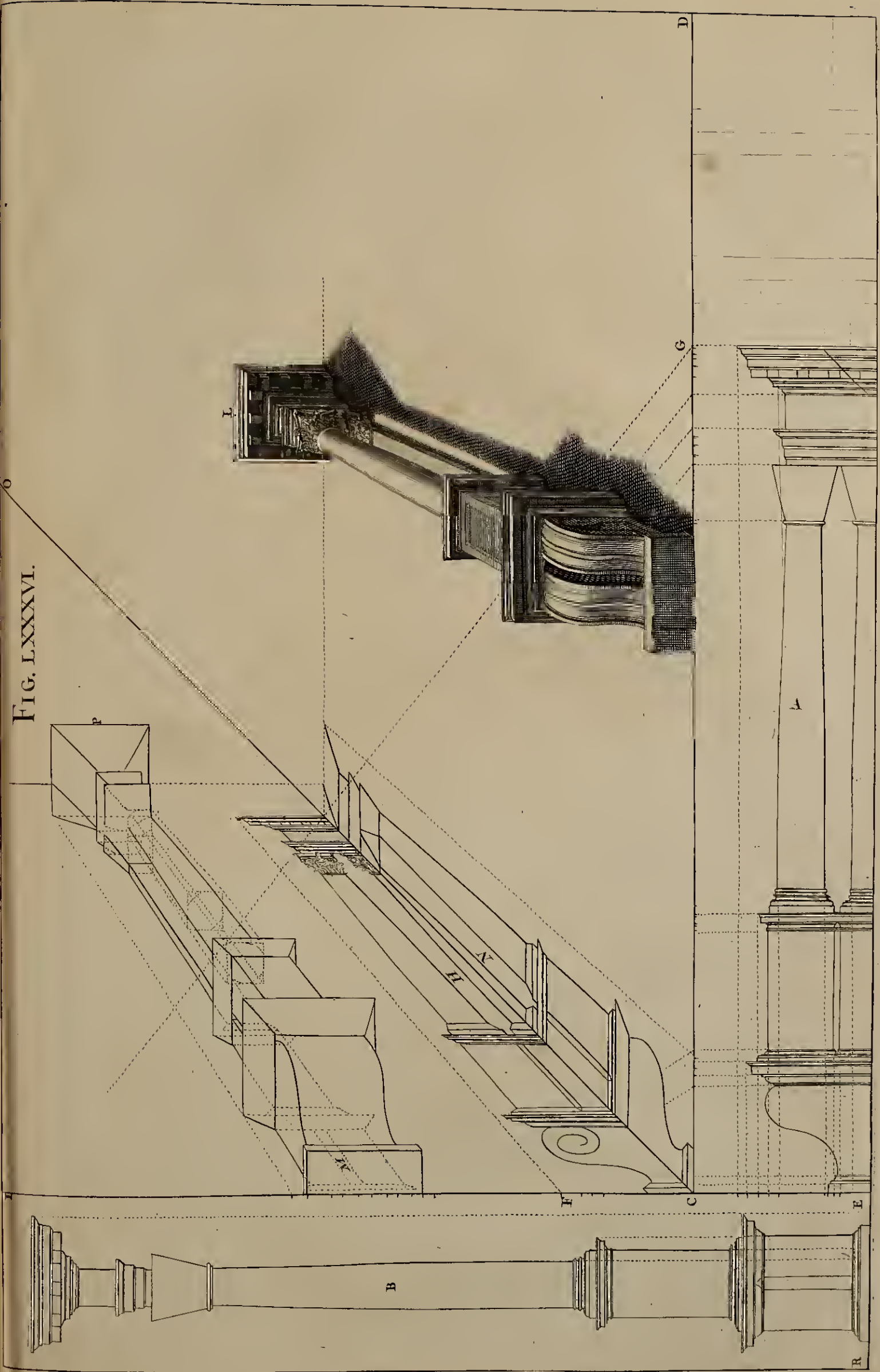


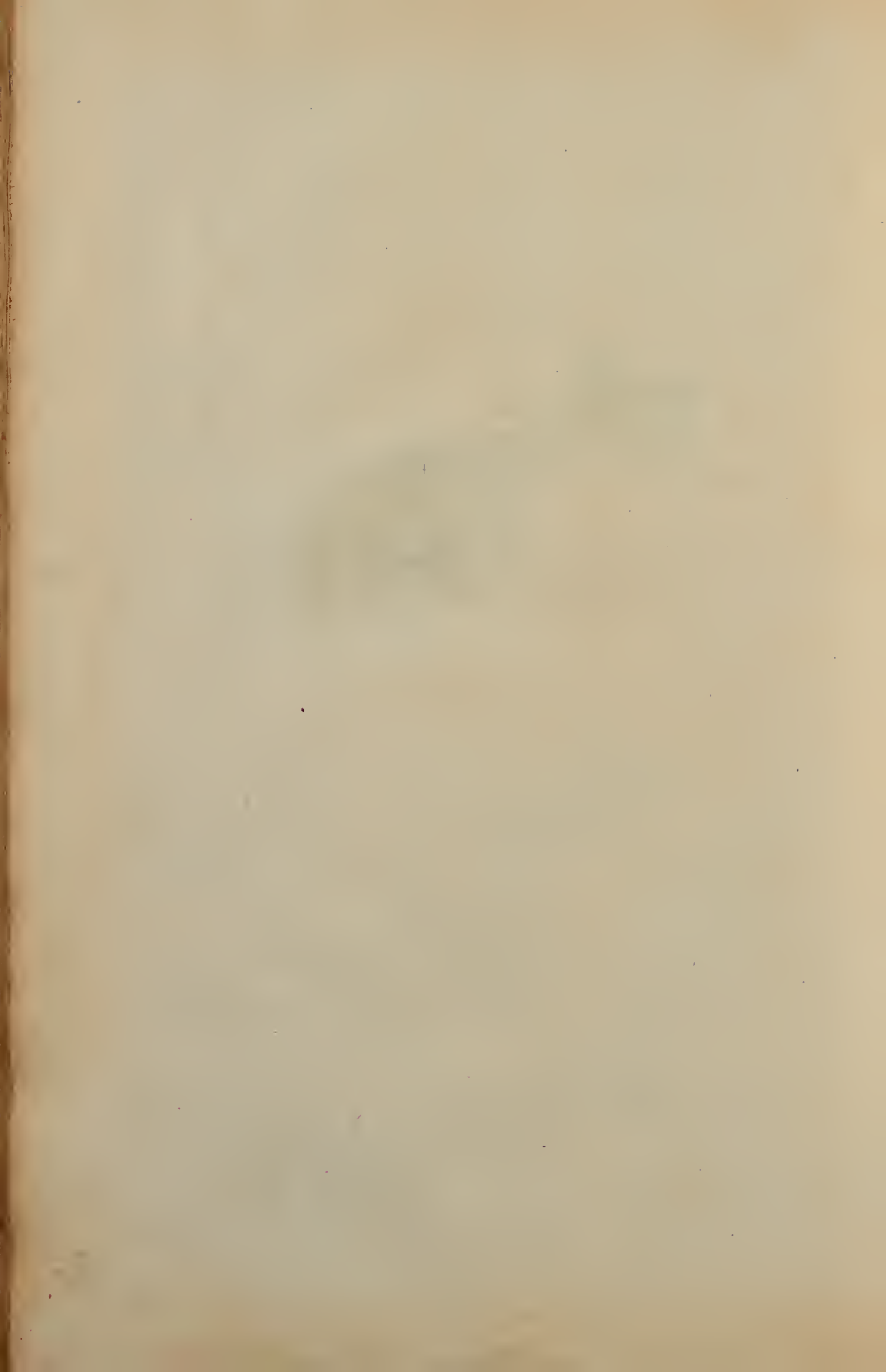
FTER the separate Description of a Corbel, Pedestal, Column, and Cornice; I have here conjoin'd them all, that you might the better perceive how to dispose Geometrical Elevations for the Business of horizontal Perspective.

The Line of the Plan is CD, the Perpendicular CI; the Geometrical Elevation of the Length of the Column, suppos'd to be lying on the Ground, is A. The Geometrical Plan thereof is B, with the Divisions of its Breadth on the Line ER. The Points of Length being transferr'd on the Line CG, and the Points of Height EC into CF; from the Divisions of CG Lines are drawn to the Point of Distance; and from those of CF to the Point of Sight. From the Sections of the Visual CO, Perpendiculars are erected, and the Elevation H completed, from whence is taken the finish'd Column L.

If upon the Plan M you would delineate another Column, the Breadths thereof must be taken from the Column B, and another Profile design'd in N, which serves as an Elevation for making the Column P. If another Column were requir'd in the Angle, the Profiles HN assist you in the ready Performance thereof.

FIG. LXXXVI.





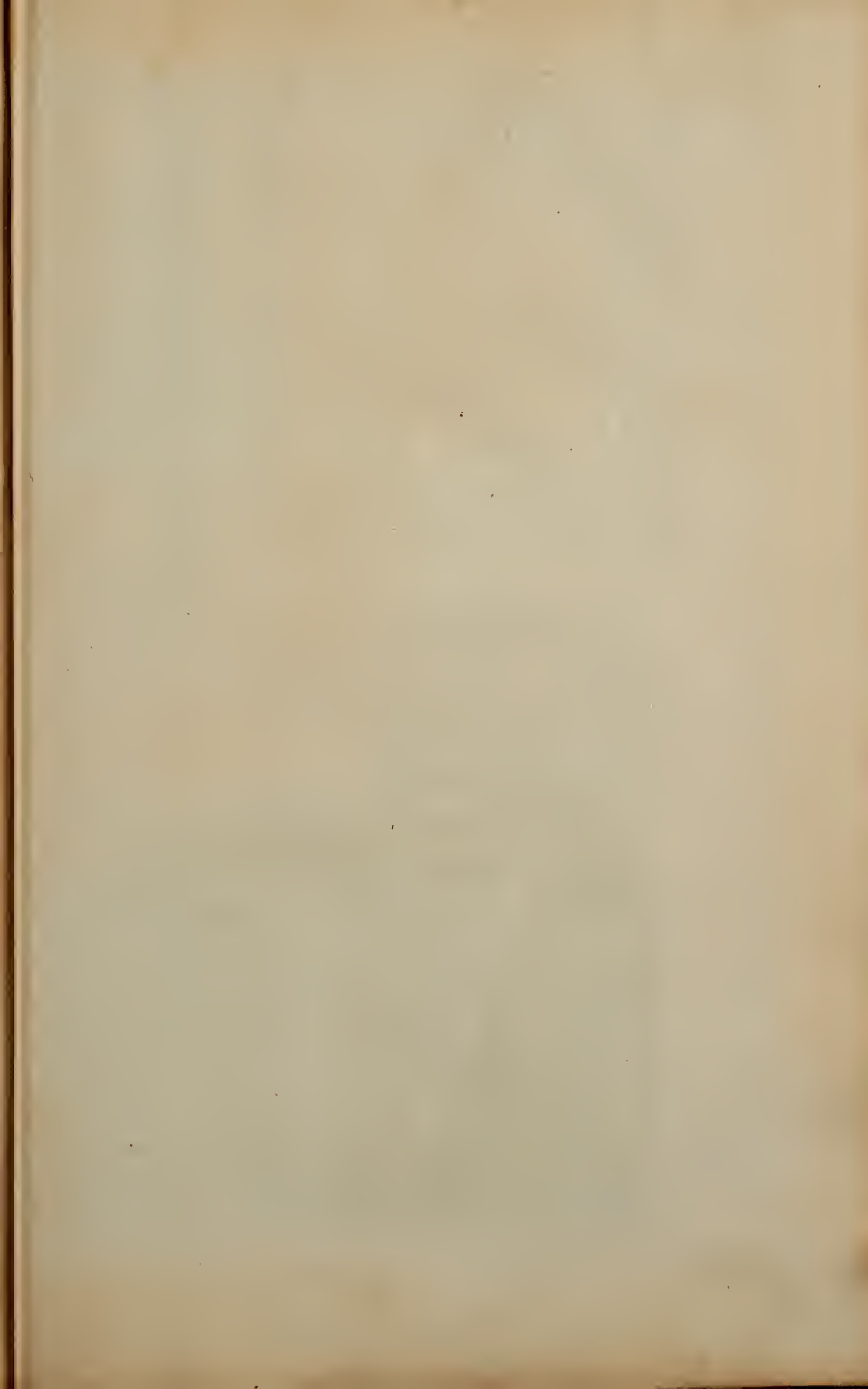


FIG. LXXXVII.

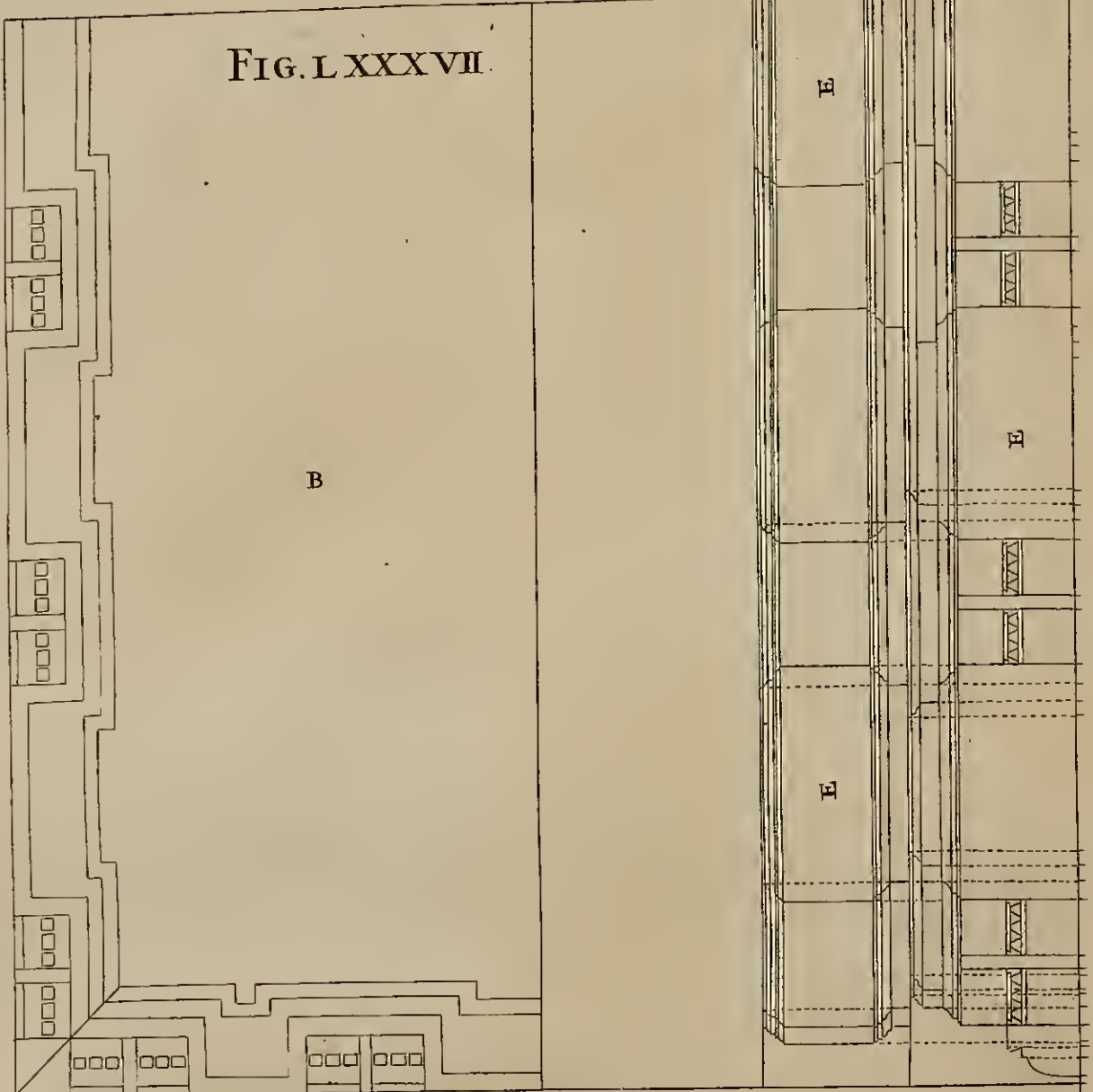
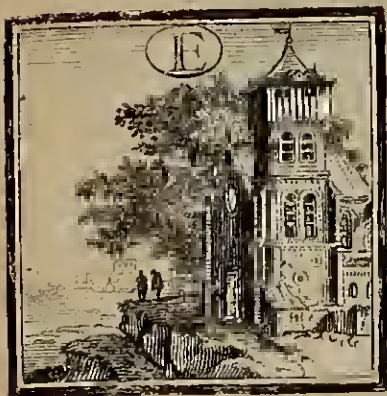


FIGURA Octogesima septima.

Præparatio necessaria ad sequentem figuram, & ad projectiones horizontales in laquearibus vel testudinibus.



PRÆBET hæc figura in *AA* unum ex quatuor parietibus aula, cujus altitudinem veram *IH* velis attollere apparenter usque in *L*, pingendo in laqueari, vel in testudine, seriem balustringum. In *B* est vestigium geometricum quartæ partis laquearis. In *C* habetur elevatio medietatis latitudinis. In *D* est sectio coronicis & mutulorum. In *E* posita est elevatio medietatis longitudinis. In *F* est punctum oculi, in *G* punctum distantie: adeoque tota distantia est *GF*.

The Eighty-seventh FIGURE.

The Preparation necessary to the following Figure, and to all other horizontal Perspectives, whether on flat or vaulted Ceilings.



THE Figure *AA* represents one of the four Walls of a Hall, whose true Height *IH* you would have appear rais'd to *L*, by painting a Ballustrade in the Ceiling thereof. *B* is the Geometrical Plan of the fourth part of the said Ceiling; *C* is the Elevation of half the Breadth; *D* is the Section of the Cornice and Corbels; *E* is the Elevation of half the Length. In *F* is the Point of Sight, in *G* the Point of Distance; so that the Distance itself is *FG*.

Figura Octogesima octava.

Horizontalis projectio balustiorum figuræ octogesima septimæ, cum brevi distantia.



*L*ARITATIS gratiâ totum laquear divisum est in quatuor partes. Prima continet contractionem vestigiæ elevationis, quæ perficitur methodo consueta. Nam linea AOV est horizontalis, BC est linea plani. Punctum oculi est O, distantie E. Secunda pars continet sectionem L, quæ dat projecturas mutulorum aliarumque partium, desumptas ex sectione D figuræ octogesima septimæ, deformato eam in angulis B & C. Tertia pars complectitur delineationem integram sine umbris: ultima pars eandem complectitur cum umbris.

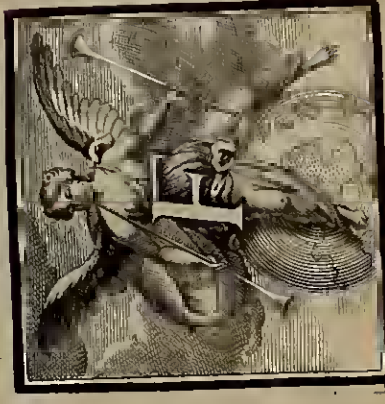
Ob punctum distantie parum remotum à puncto oculi, nimiam amplitudinem ac deformem apparentiam habere videtur hæc delineatio. Nihilominus, si ex distantia EO figuram suspexeris, omnis deformitas evanescet.

Ut fucus imperitis fiat, industrii Pictoris interest parare sibi geminum exemplar suorum Operum, in quibus distantia sit nimis brevis; unum videlicet parvam ostendendum, in quo punctum distantie sit remotum à puncto oculi, quantum necesse est ad vitandam omnem deformitatem. Alterum verò, in ipsomet Opere clam usurpandum.

Si pingendæ sint testudines, oportet prius facere in eis reticulationem peculiaris; quæ quia difficilis est, & paucis explicari nequit, in aliud Opus referatur.

Eighty-eighth Figure.

The horizontal Projection of the Ballustrade of the Eighty-seventh Figure, view'd at a small Distance.



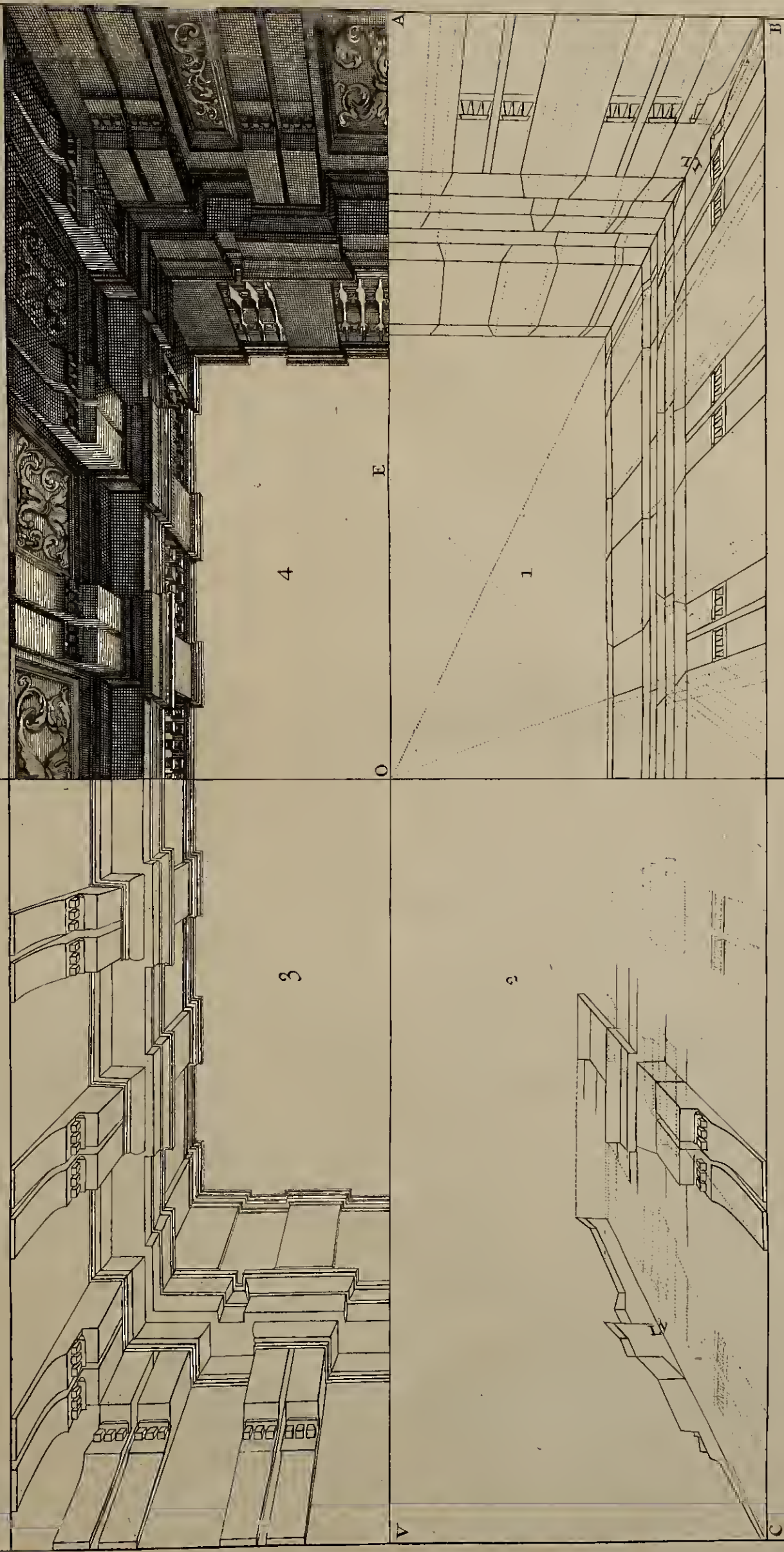
OR the better Illustration of this Figure, I have divided the whole Ceiling into Four Parts. The first contains the Plan and Elevation in Perspective, after the usual manner; AOV being the horizontal Line, BC that of the Plan; the Point of Sight O, and that of Distance E. The second Part contains the Section L, which gives the Projectures of the Corbels and other Parts taken from the Section D of the Eighty-seventh Figure, by drawing it in the Angles B and C. The third Part comprehends the Delineation of the Perspective without Shadows. The fourth Part contains the same wholly shadow'd and finish'd.

Through the near Approach of the Point of Distance to the Point of Sight, you may perhaps imagine this Draught will appear too wide, and so have an ill Effect: But when once you view it from its due Distance EO, you will find all such Doubts vanish and come to nothing.

When you have to deal with Persons unskill'd in these things, and are to paint for so small a Distance; your best way is to make two Draughts; one for publick Shew, in which you may place the Point of Distance so far from the Point of Sight, as is necessary for preventing Deformity; and the other you may privately make use of in performing your Work.

If you are to paint arch'd or vaulted Ceilings, a particular kind of Net or Lattice-work must first be made therein; the Performance whereof being difficult, and not capable of being explain'd in few words, I have reserved it for another Volume.

FIG. LXXXVIII.





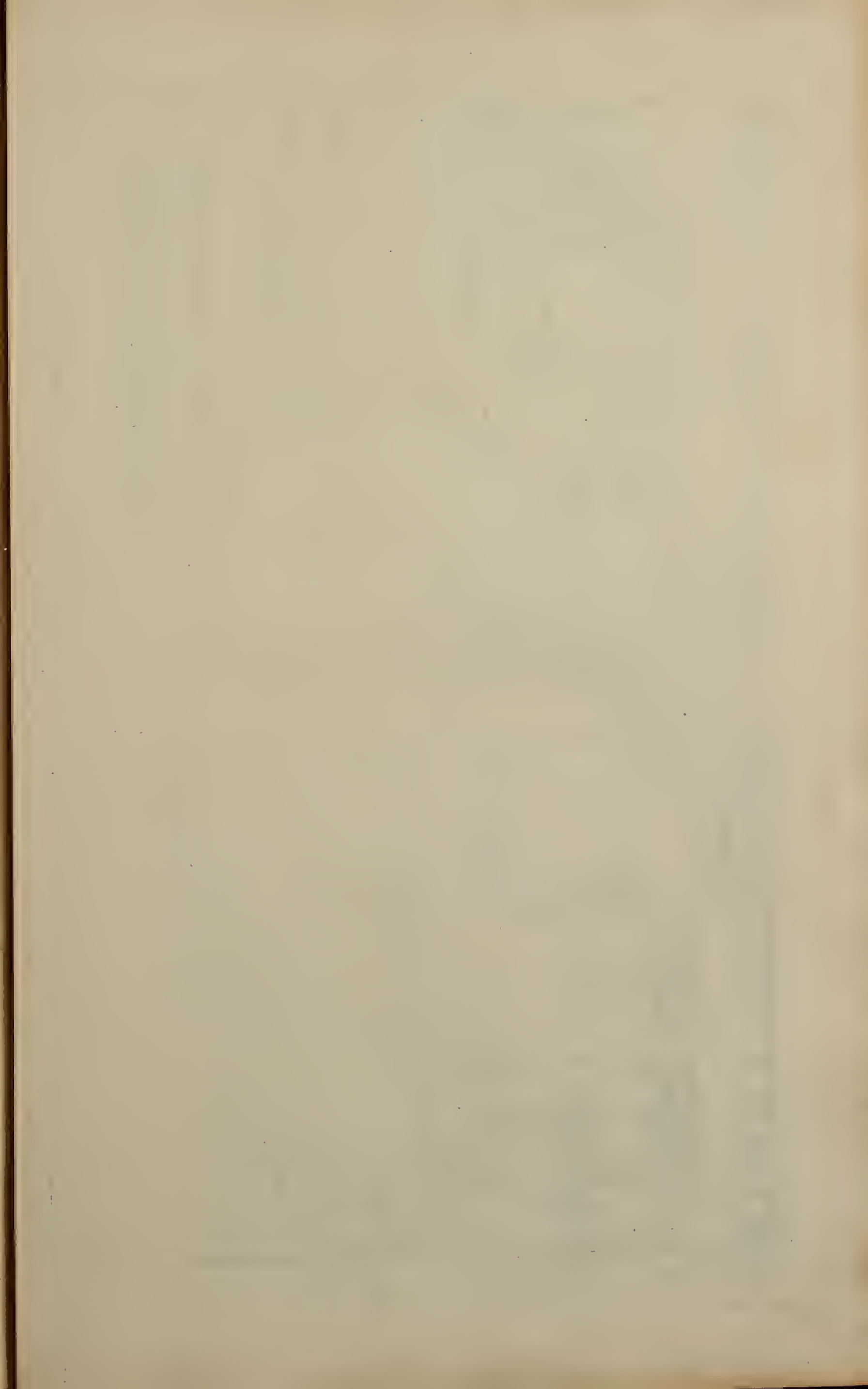


FIG. LXXXIX.

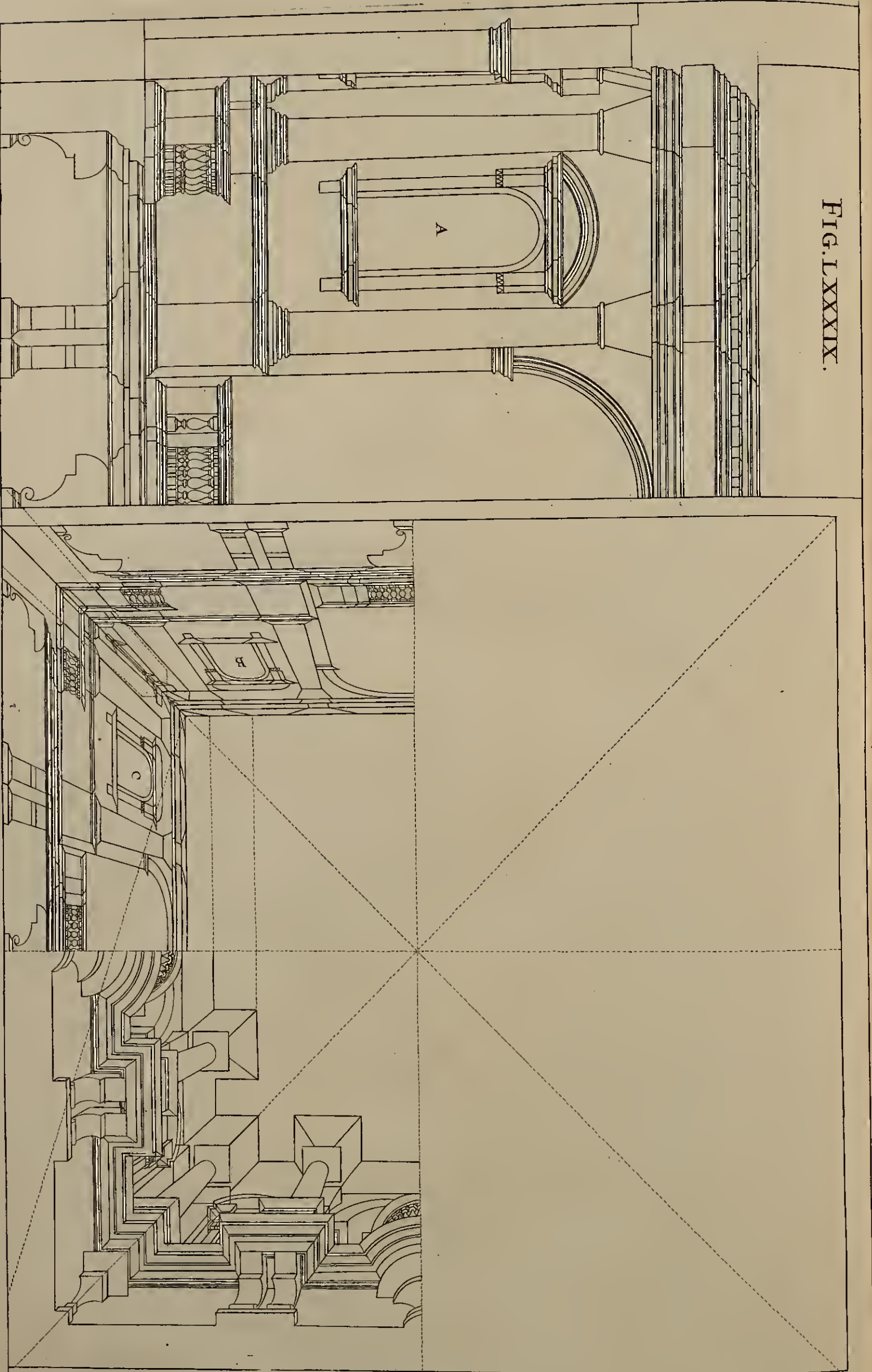


Figura Octogesima nona.

Horizontalis projectio architecturae
in laqueari quadrato.



I laquear sit quadratum, & valde distans ab oculo, architecturam huic similem in eo depingere licebit. A est elevatio geometrica; eadem vero deformata in B & C, gerit munus vestigii & elevationis. Medietas unius ex quatuor partibus, usui esse potest in toto opere, aut premendo chartam, aut eam perforatâ, immittendo per foramina carbonem minutissimè contusum.

Eighty-ninth FIGURE.

*An horizontal Projection of Architecture
in a square Ceiling.*



F the Ceiling be square, and very remote from the Eye, you may paint in it some such Piece of Architecture as this. *A* is the geometrical Elevation; the same reduc'd into Perspective in *B* and *C* does the Office of a Plan and Elevation. The Half of one of the four Parts may suffice for the Draught of the whole Work, either by tracing over the Lines of the Paper, or by pricking small Holes therein, and pouncing them through with Charcole finely powder'd.

FIGURA Nonagesima.

Horizontalis projectio tholi.



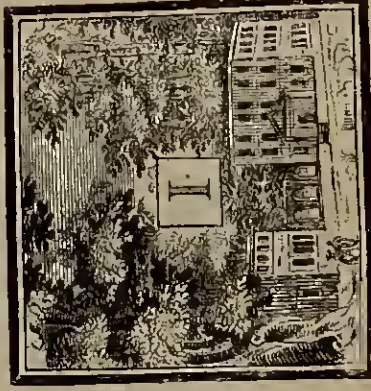
NITIVM hujus rei fiet à vestigio geometrico, in quo due series circulorum designant columnas; alie linee designant stylobatas, ac projecturas & unguis basium & coronicum. Linea plani est AB, horizontalis CD, perpendicularis AD. Punctum oculi est O, distantie D; adeoque figura hec debet habere supra oculos altitudinem DO. Punctum oculi positum fuit extra ipsum tholum, ut qui eum aspiciunt, minus defatigentur, ac plus appareat de architectura & de artificio; secus verò contingeret si punctum oculi esset in medio. Itaque puncta linee EF transferentur in partem AG linee AD. centrum I vestigii transferetur in H &

ex omnibus his punctis fient visuales ad O. Deinde altitudine tholi, ac divisionibus partium singularium tum ipsius, tum laterne, translatis in lineam AB, ex punctis divisionum fient recte ad punctum distantie D. Ubi autem he secant visuales AO, erigentur perpendiculara, quorum sectiones cum visuali HO dabunt centra pro singulis circulis. Inter visuales AG ducere oportet lineas terminativas columnarum & coronicum; quemadmodum fieret, si ex vestigio eruta fuisset elevatio geometrica. His positis, aggregeris delineationem opticam ipsius tholi, translatis in perpendiculararem EO centris ope parallelarum HI, LN; ac semidiametro LM fiet circulus NP pro sumâ coronicis: semidiametro ST fiet circulus QR, & sic de reliquis. Quomodo autem per rectas ex angulis vestigii ad punctum oculi, habeantur unguis coronicis, ostendunt numeri 1, 2, 3, 4; linee verò laterales unguum tendunt ad centra suorum circulorum, ut videre est in N 3, 4. In vestigio, ne nimium occupetur, mutulos omisimus.

Ex his patet necessitas faciendi vestigium geometricum totius tholi, ac non sufficere vestigium unius columnae; quum singule peculiare exigant deformationes. Quum autem Opus ipsum delineandum ac pingendum fuerit, ipsum desumere non poteris ex parvo exemplari, ope reticulationis; Quinimo suis locis ducere oportebit lineas visuales, & invenire centra omnium circulorum. Figendo autem funiculum in singulis centris, ipsius adjumento facillimè absolves omnes circumferentias.

The Ninetieth Figure.

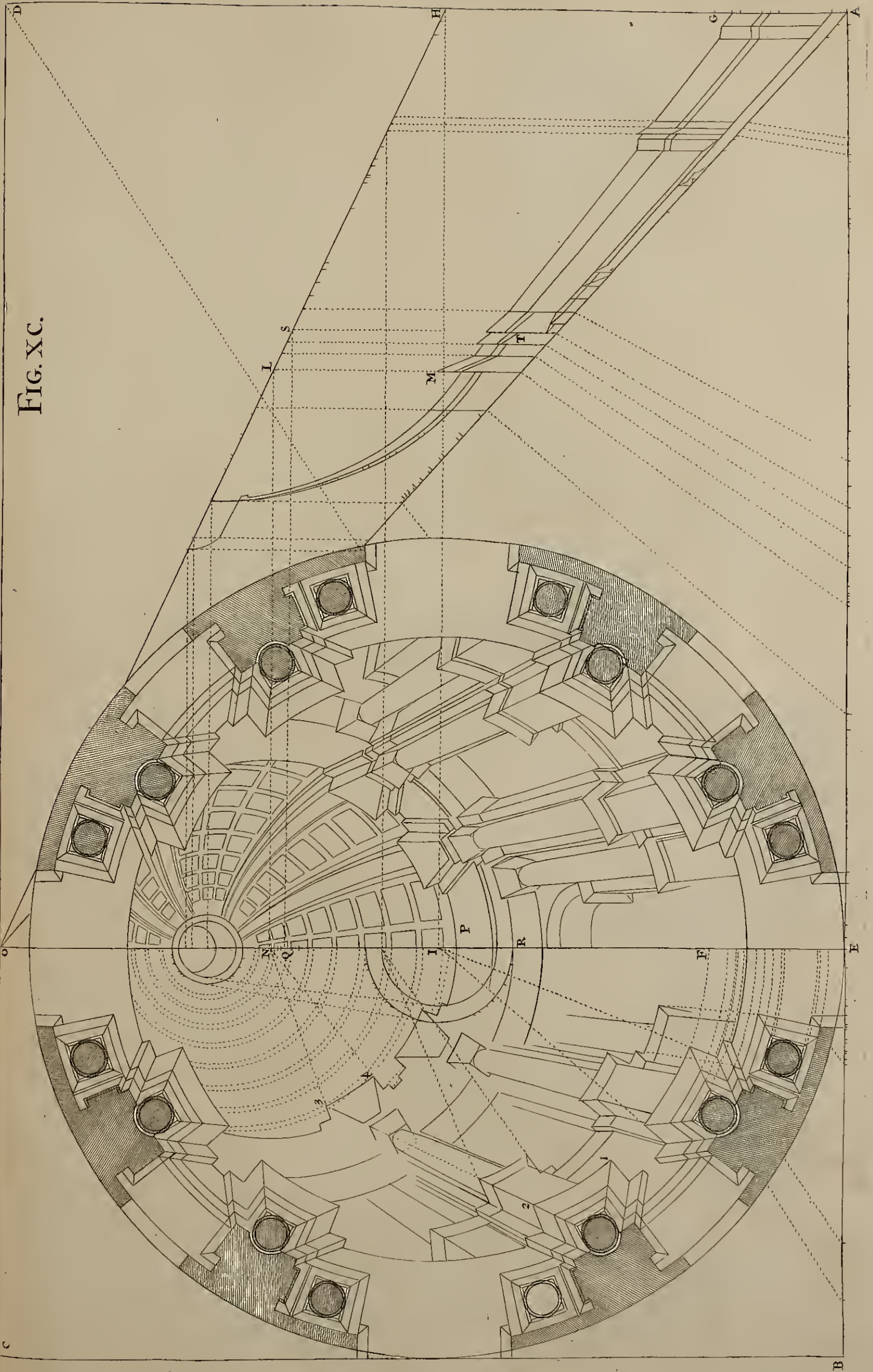
A Cupola in horizontal Perspective.

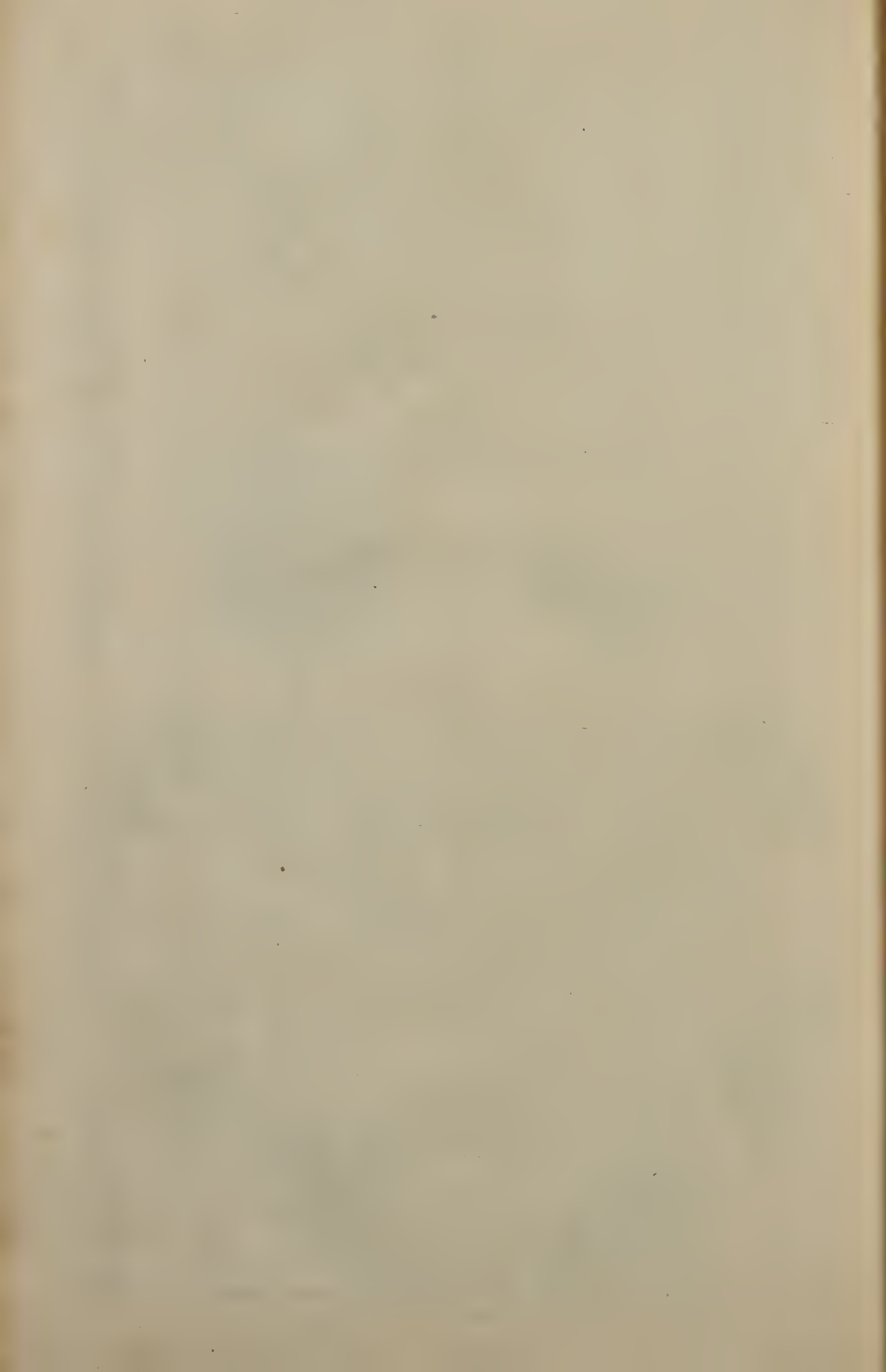


IN the Execution of this Work, you are to begin with the Geometrical Plan; in which the two Ranges of Circles denote the Columns, the other Lines shew the Pedestals, with the Projectures and Breaks of the Bases and Cornices. The Line of the Plan is AB, that of the Horizon CD, the perpendicular Line is AD. The Point of Sight is O, that of Distance D; wherefore this Figure ought to be plac'd as much above the Eye, as the Height DO. I have set the Point of Sight something without the Cupola, that the Eye might be less weary'd in viewing the Work, and embrace more of the Architecture, than it could have done, had the Point of Sight been in the midst. The Points of the Line EF are transfer'd into AG, part of the Line AD. The Center of the Plan I is continu'd to H, and from all these Points visual Lines are drawn to O. Then placing the Heights of every part both of the Cupola and Lantern on the Line AB, from the Points of those Divisions draw Lines to the Point of Distance D; and whete they cut the Visual AO, erect Perpendiculars intersecting the Line HO; which Points are the Centers of the several Circles. On the Visuals, between AG, must be describ'd the Out-lines of the Columns and Cornices, in like manner as when a Geometrical Upright is rais'd from a Plan. This done, you proceed to the Delineation of the Cupola itself in Perspective, by transferring into the Perpendicular EO the several Centers of HO, by Parallels to HI, as LN, &c. On the Center, with the Interval LM, describe the Circle NP, for the Nose of the Cornice; and with the Semidiameter ST describe the Circle QR, and so of the rest. The Numbers 1, 2, 3, 4, shew how the Breaks of the Cornice are determin'd by Lines from the Angles of the Geometrical Plan tending to the Point of Sight, till they intersect the Circle: The Returns of which Breaks are made by Lines tending to the Centers of their respective Circles; as is plain from N 3, and N 4. In this Plan I have omitted the Corbels, lest I should too much encumber the Work.

Hence appears the Necessity of making the Geometrical Plan of the whole Cupola, the Plan of a single Column not being sufficient; by reason each requires its particular Delineation. And when the Work itself is to be drawn for painting, you can't well take it from a small Draught by way of Net-work or Squares, but the visual Lines should be drawn in their proper places, and the several Centers found; in which, by fixing Strings, you may readily describe the Circumferences of all the Circles.

FIG. XC.





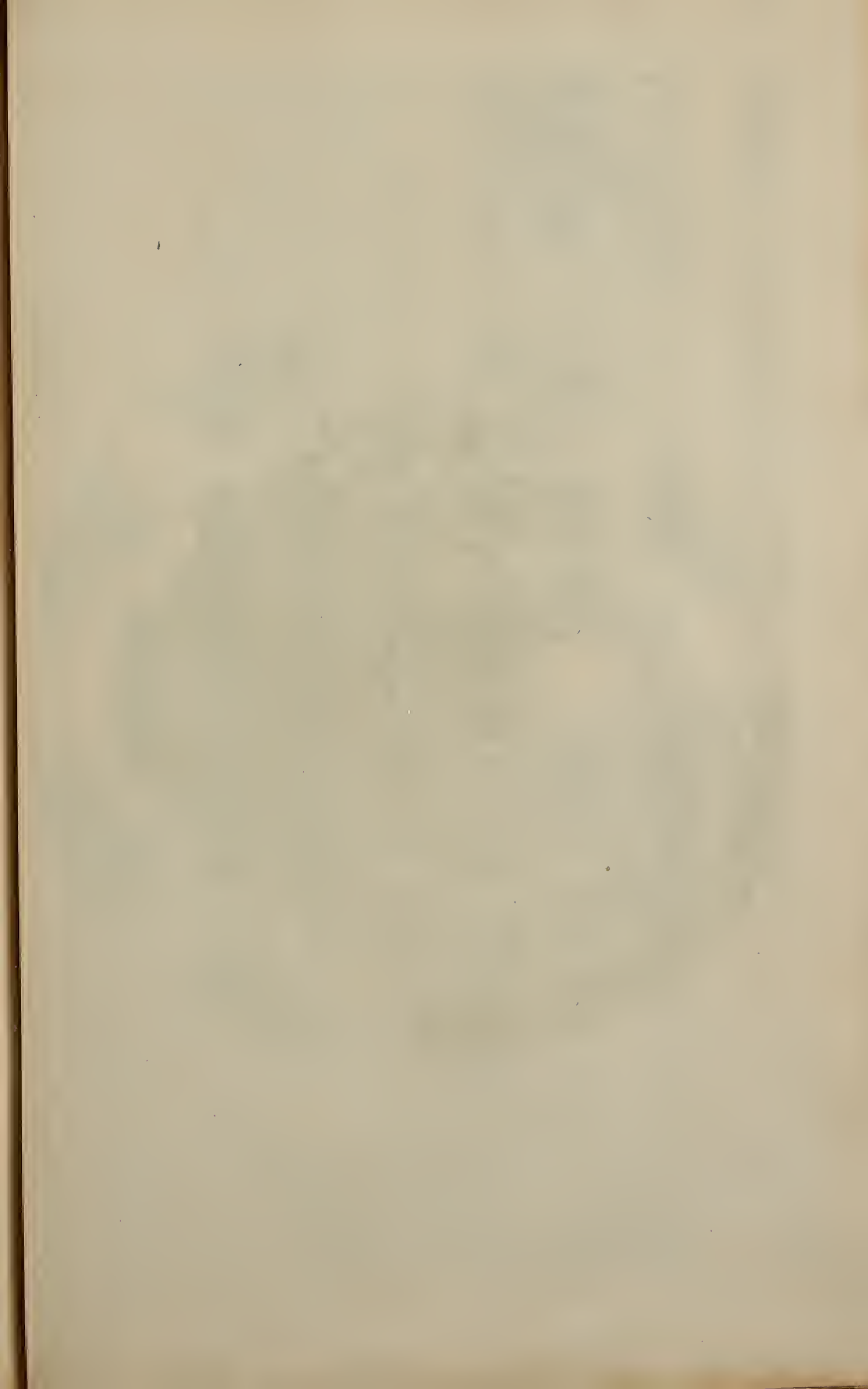


FIG. XXI.

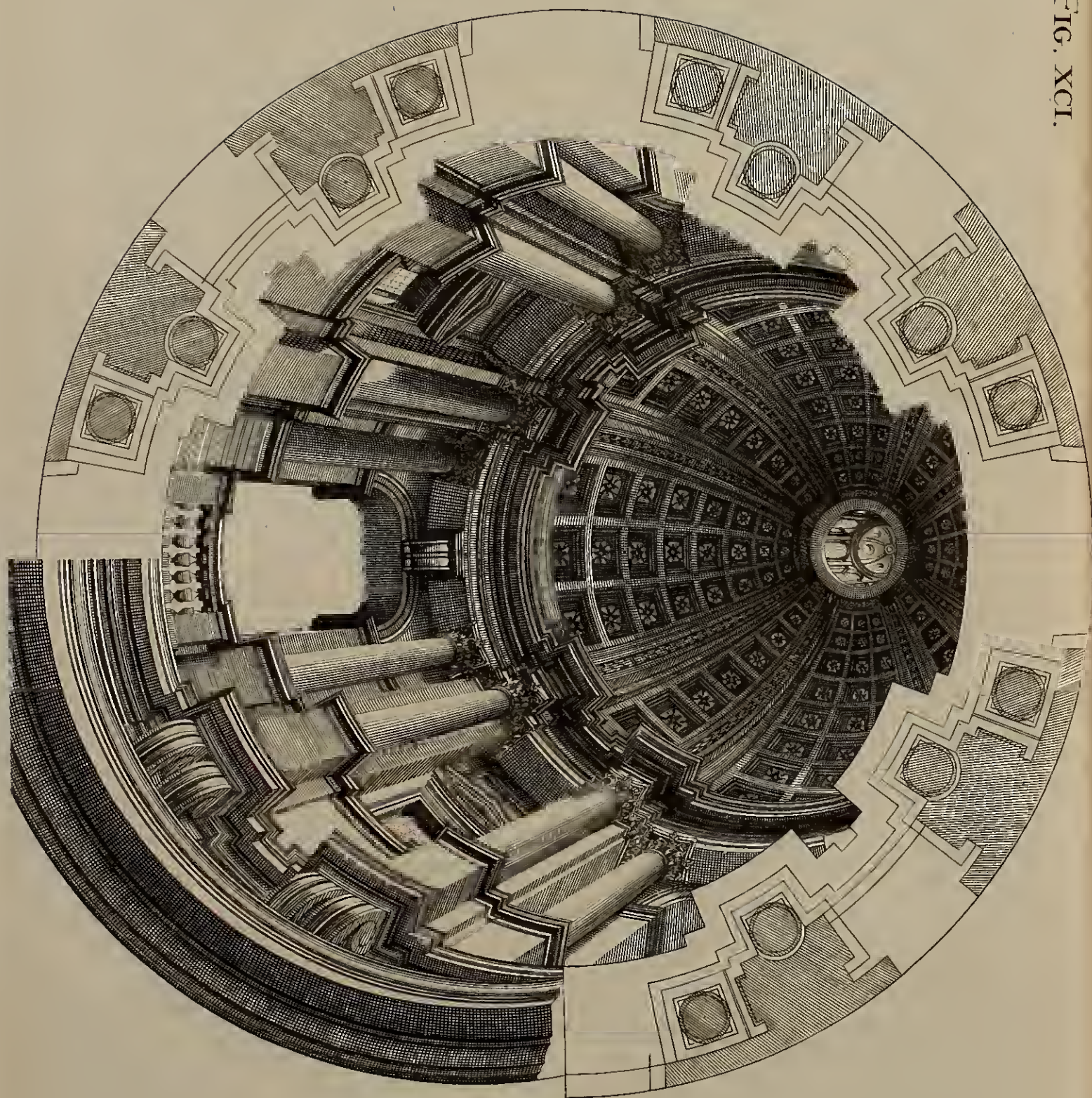


Figura Nonagesima prima.

Tholus figura nonagesima, cum luminibus & umbris.



HOLUS quem vides in hac pagina, pollicetur sibi vitam diuturniorem illo, quem super telario plano insignis amplitudinis, depinxi anno 1685. in Templo S. Ignatii Collegii Romani. Proinde si casus aliquis illum absumat, non deerunt qui ex isto eundem in melius reficiant. Mirari fuerunt Architecti nonnulli, quod columnas anteriores mutulis imposuerim, id enim in solidis edificiis ipsi non facerent. Verum eos metu omni liberavit amicissimus mihi Pictor, ac pro me spondit, damnum omne se statim reparaturum, si fatiscientibus mutulis, columnas in praeceptis vere contingat.

The Ninety-first Figure.

The Cupola of the Ninetieth Figure, with its Lights and Shades.



THE Cupola in this Plate will in all Likelihood be of longer Duration, than that which I painted on a very large Table, for the flat Ceiling of the Church of S. Ignatius of the Roman College, anno 1685. For if that suffer by any Accident, with the help of this its place may be supply'd by a better. Some Architects dislike'd my setting the advanc'd Columns upon Corbels, as being a thing not practis'd in solid Structures; but a certain Painter, a Friend of mine, remov'd all their Scruples, by answering for me, That if at any time the Corbels should be so much furcharg'd with the Weight of the Columns, as to endanger their Fall, he was ready to repair the Damage at his own Cost.

Figura Nonages. secunda.

Tholus octangularis.



X circulo fiet octagonum, accipiendo medietatem quadrantis circuli, ut habeantur singula latera octagoni. In eisdem lateribus distribuetur vestigium geometri- cum totius architecturæ, cum projecturis omnium membrorum, juxta modum quem servavimus in limbo circulari figuræ nonagesimæ. Utiliter etiam fieret elevatio geometrica totius Operis; quamvis ob spatii angustias ego eam omiserim. Deinde postâ una cuspide circini in centro spatium A & B, ut hic vides: atque ope parallelarum, singulorum projecturarum inter spatium A & B, ut hic vides: atque ope parallelarum, omnia transferentur in lineam CD, ut fiat optica deformatio, quam poscit sectio elevationis, cum aliis preparationibus, ut in figura præcedenti. Nam hic quoque ope circulorum invenire oportet puncta extrema in prominentiis membrorum singulorum architecturæ: ut conjungendo puncta per lineas rectas, que forment facies octagoni, compleatur totum Opus.

Ninety-second Figure.

An Octangular Cupola.



FROM the Circle describe the Octagon, by taking half the Quadrant of the former for each Side of the latter. On these Sides the Geometrical Plan of the whole Architecture is to be dispos'd, with the Projectures of all the Members thereof, in the same manner as was done in the circular Border of the Ninetieth Figure. It will also be expedient, to make the Geometrical Elevation of the whole Work, tho' thro' Want of Room I have here omitted it. Then placing one Point of the Compasses in the Center of the Circle, extend the other to the Height of the several Projectures between A and B, as you see in the Figure; and by help of the Parallels transfer them all into the Line CD, for putting the Profile of the Upright into Perspective, and drawing the other Requisites, as in the foregoing Figure. For here also, by means of the Circles, are found the extreme Points of the Projectures of the several Members of the Architecture; and by conjoining these Points with straight Lines agreeable to the Shape of the Octagon, the whole Work is completed.

FIG. XCII.

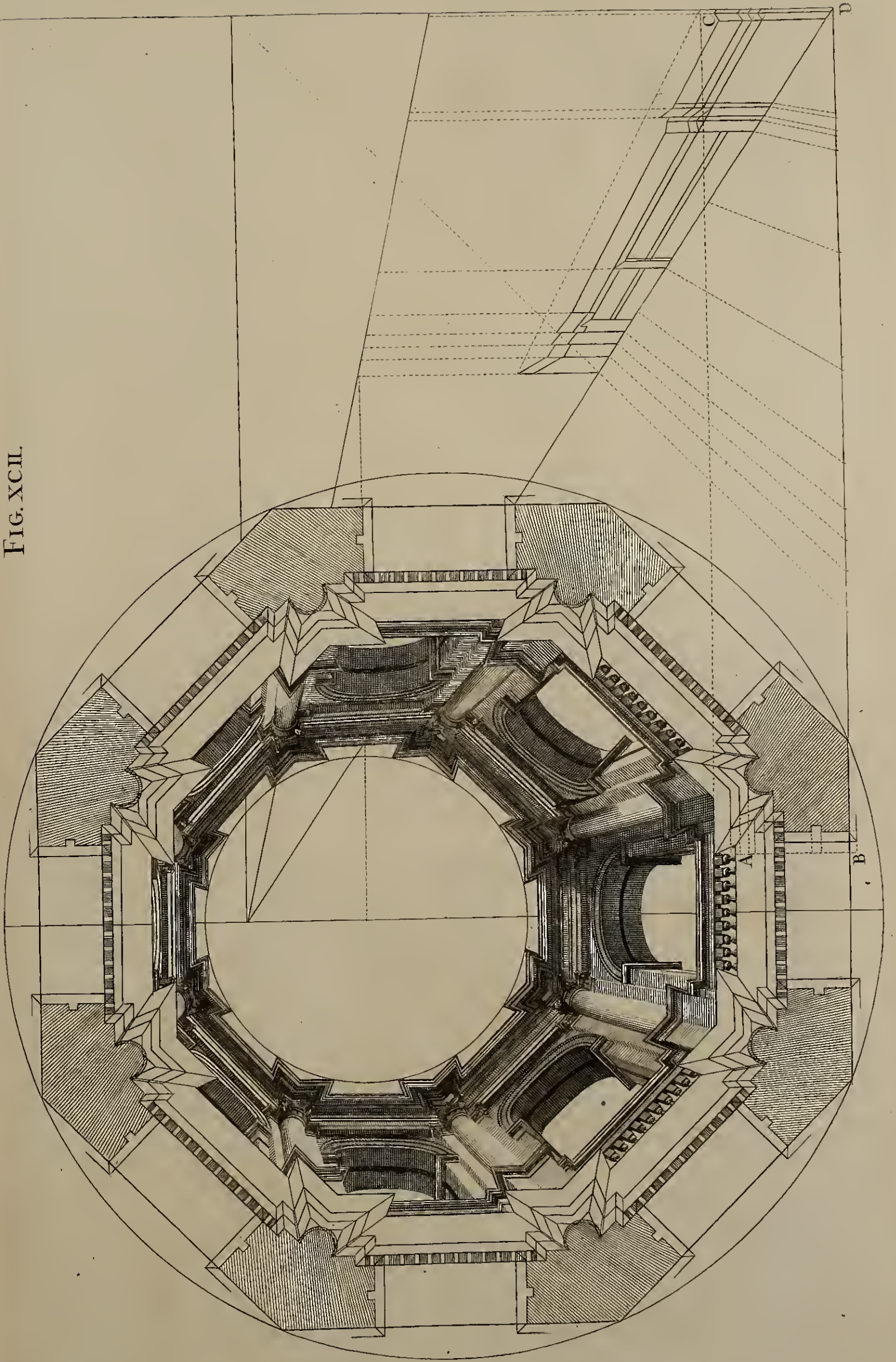
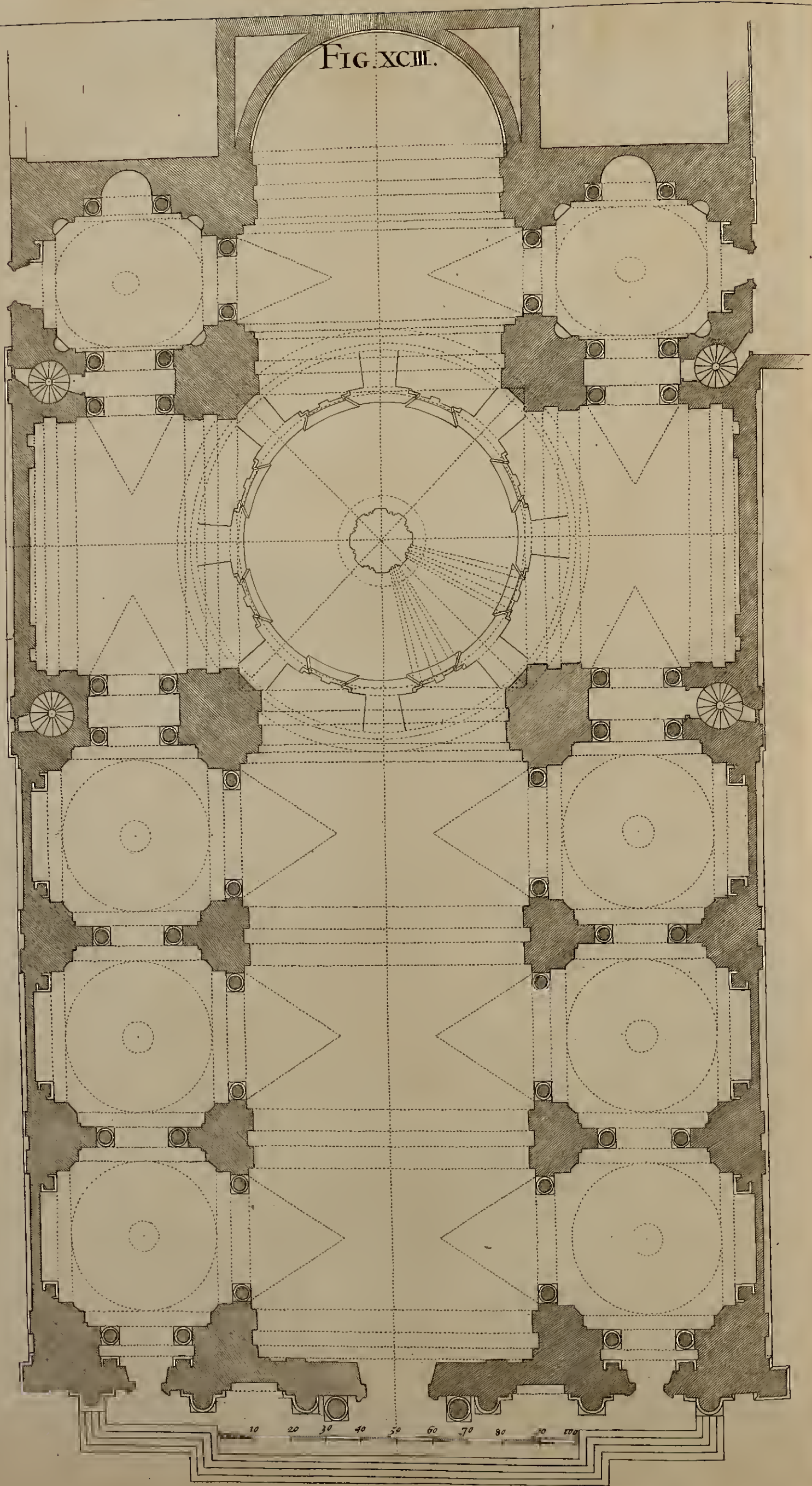




FIG. XCIII.



10 20 30 40 50 60 70 80 90 100

FIGURA Nonagesimatertia.

Vestigium templi Ludovisiani S. Ignatii almæ urbis.



ONSTITUERAM huic Libro finem imponere figurâ nonagesimasecunda ; nihilominus ut satisfaciam precibus amicorum, cupientium addiscere modum reticulationis optica, quæ adhibetur in superficiebus irregularibus, ejusque memini figurâ octogesima octava, publici juris facere decrevi ejus construendæ methodum. Ipsiusmet retis ope delineavi non solum ædificium mox representandum, sed etiam figurâs omnes testudinis templi Ludovisiani, in qua pingenda nunc occupor. Eademque reticulatione, quæ erit ultima figura hujus Libri, dabimus Operi nostro suum complementum ; quum nulla sit superficies, in qua suas delineationes juxta

Perspectivæ regulas, earum rerum Studiosi absolvere nequeant.

Exhibet hæc figura vestigium totius templi. Quamvis enim non indigeam nisi testudine inter januam maximam & tholum ; proderit nihilominus Architecturæ Studiosis, universi Operis elegantiam ac symmetriam per o-

The Ninety-third FIGURE.

The Geometrical Plan of the Church of S. Ignatius at Rome.



Had once determin'd to end this Book with the Ninety-second Figure ; but at the Request of some Friends, who were desirous to learn the Making of Perspective Net-work for irregular Surfaces, as was hinted in the Eighty eighth Figure ; I resolv'd to publish the Manner of performing the same. By the Help of this Net-work, I delineated not only the Architecture now to be treated of ; but also each Figure in the Vault of the Church of S. Ignatius, which I am at present employ'd in painting. The Method is laid down in the last Figure of this Book, and entirely com-

pletes the same ; there being no Superficies, how irregular soever, but the Studios may thereon describe, by these Rules, whatever Perspective he has occasion for.

This Figure contains the Plan of the whole Church ; for though my present Design requir'd no more than the Vault of the Nave, between the great Door and the Cupola ; I thought it might be nevertheless acceptable to the Curious in Architecture, to have a View of the whole Design, so celebrated for the Elegancy and Proportion of its Parts.

Figura Nonagesima quarta.

Orthographia templi Ludoviciani.



T magis tibi gratificer, orthographiam seu elevationem templi Ludoviciani in longum dissecti delineavi, cum omnibus mensuris quae vestigio sunt communes; addito tholo juxta ideam Autoris. Ejus autem nondum constructi loco, positum est in A & B telarium cum tholo depicto, de quo supra in figuris nonagesima & nonagesimaprimum.

Ninety-fourth FIGURE.

The Orthography, or Geometrical Elevation of the Inside of S. Ignatius's Church.



OR your greater Satisfaction, I have here given the Geometrical Upright of the Church dissected lengthwise, with all its Measures agreeable to those of the Plan; as also the Cupola design'd by the Author: Which not being yet built, instead thereof is plac'd between A and B, the painted Cupola before describ'd in the Ninetieth and Ninety-first Figures.

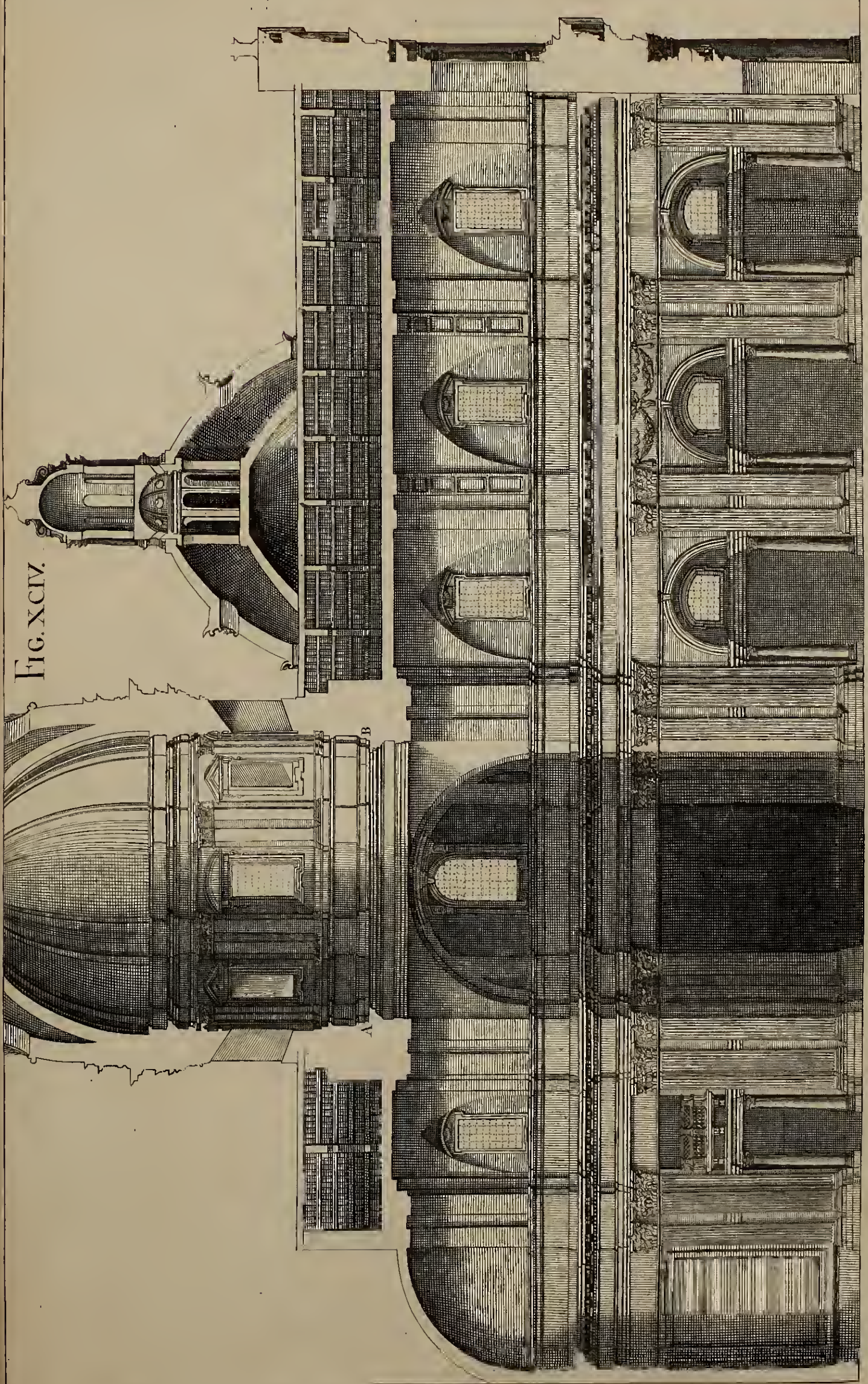


FIG. XCIV.

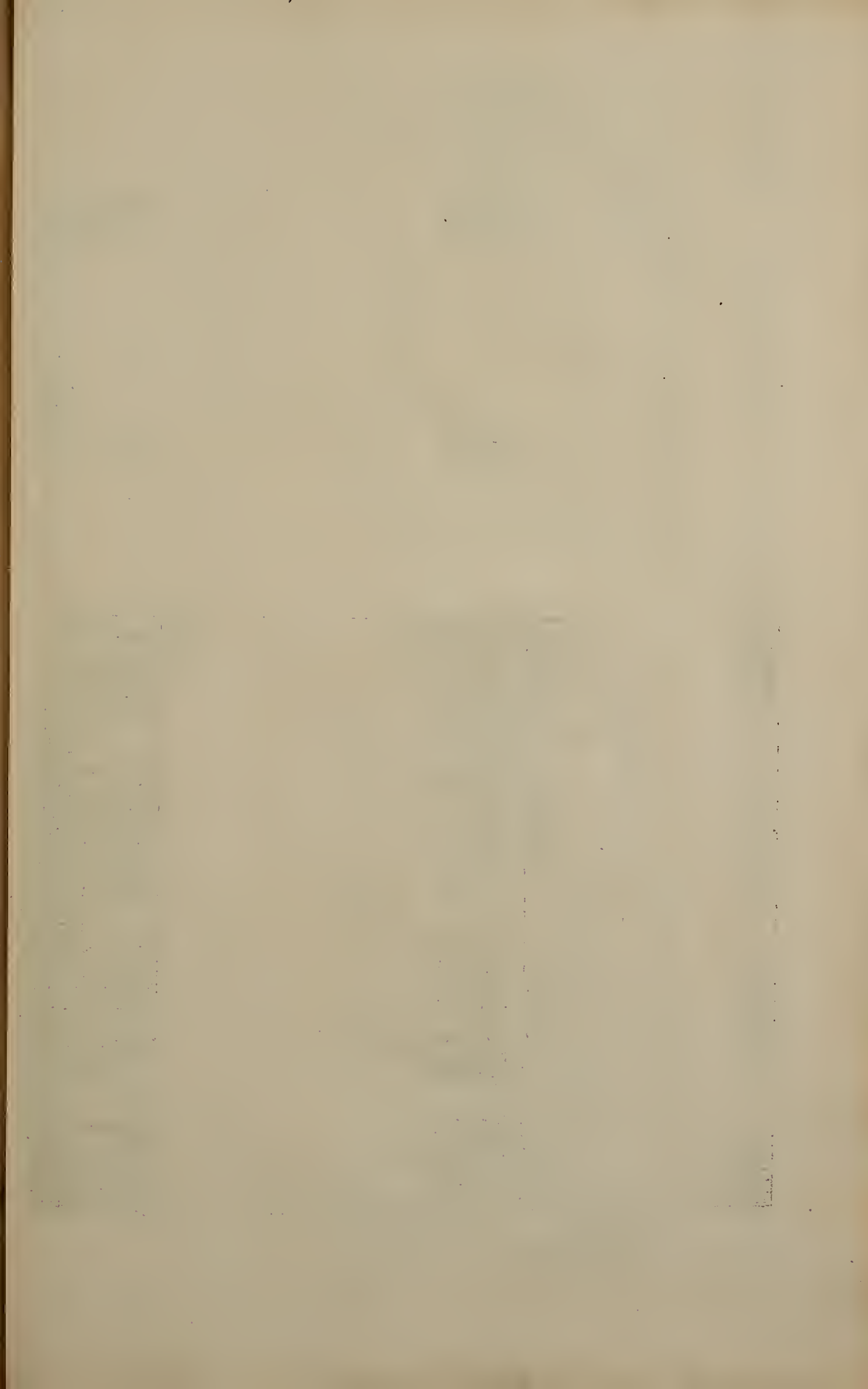


FIG. XCIV.

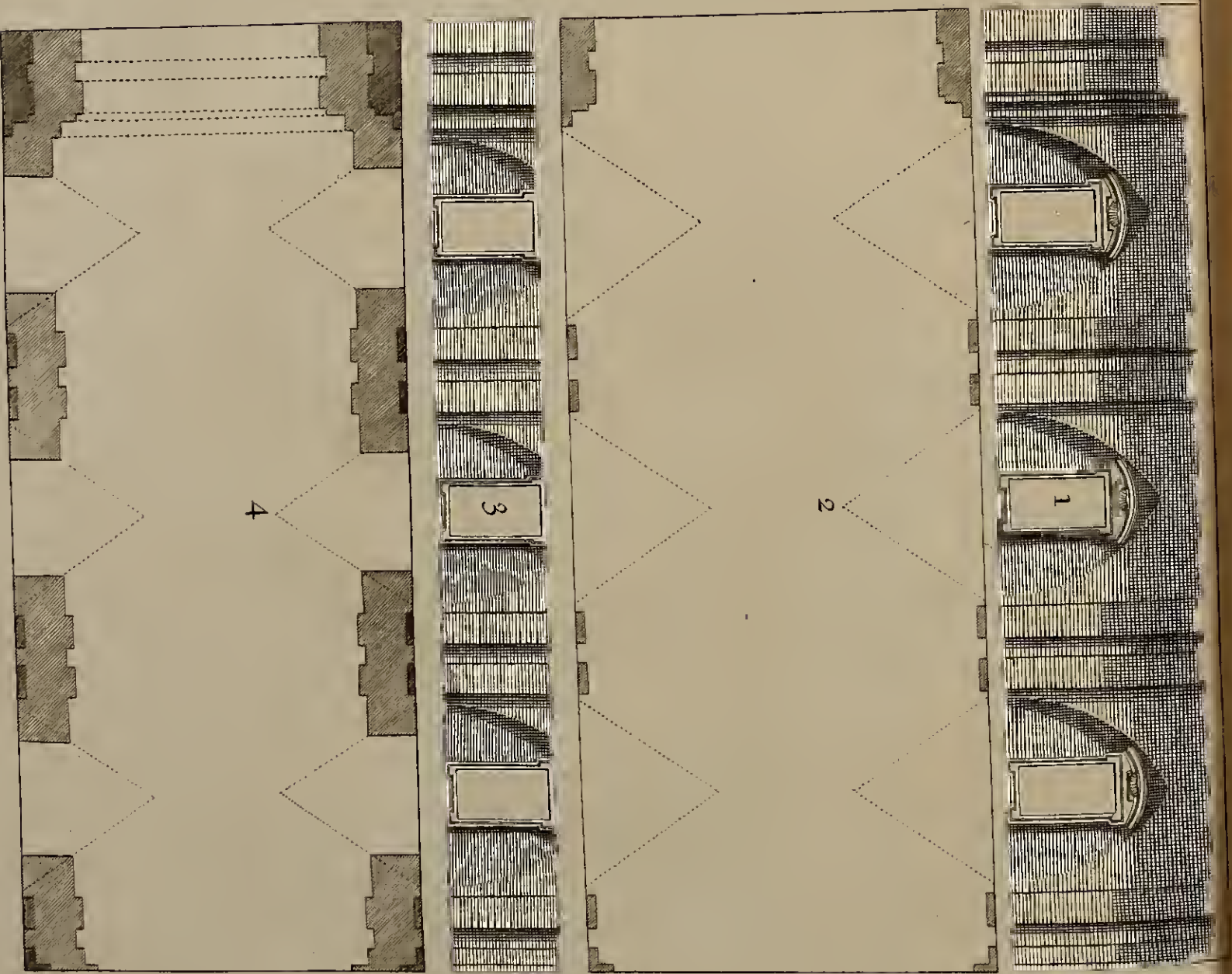


Figura Nonagesima quinta.

Aliæ præparationes ad figuras nonagesimam octavam & nonagesimam nonam.



quam pingimus in fornice. Quarta pars est vestigium geometricum fornicis, cum prominentia quam habent arcus in summitate jam dicta fenestrarum. Finis autem eandem esse soliditatem, tum edificii depicti, tum navis templi; sola enim columnæ, quæ respondent pilis templi, prominent extra edificium.

X hac figura in quatuor partes divisa, discas ex uno intuitu methodum qua sum auspicatus. optican delineationem templi Ludovisiani. Prima pars exhibet latus dextrum testudinis inter januam templi ac tholum. Secunda pars continet vestigium ejusdem testudinis, arcibus ac lunulis distinctæ. Tertia pars continet latus dextrum testudinis usque ad summitatem fenestrarum, unde incipit Architectura

The Ninety-fifth Figure.

Other Preparations to the Ninety-eighth and Ninety-ninth Figures.



begins the Architecture painted in the Vault. The fourth Part contains the Geometrical Plan of that part of the Vault which is painted; with the Lunettes made by the Arches above the Heads of the aforesaid Windows. The Disposition of the painted Architecture above, is the same with that of the Nave of the Church; save that, answerable to the Pilasters below, I have suppos'd Columns projecting over the Work.

Y this Figure divided into four Parts, you will at first Sight perceive the Method I observ'd in beginning the Perspective Design of this Church of S. Ignatius. The first Part shews the right-hand Side of the Vault between the Door and the Cupola. The second contains the Plan of the same Vault, with its Arches and Lunettes. The third Part represents the same right-hand Side, to the top of the Windows; where begins

Figura Nonagesimafexta.

Aliae praeparationes ad figuras nonagesimamodavam & nonagesimamnonam



RI M A pars figurae hujus trifariam divisa, repraesentat elevationem geometricam lateris templi supra coronicem, & aedificii in testudine pingendi. Secunda pars complectitur arcum testudinis maximum, & elevationem geometricam faciei ejusdem aedificii: Tertia pars exhibet vestigium totius aedificii pingendi in testudine, cujus amplitudo eadem est cum amplitudine navis, ut antea dicebamus. Porro vestigium geometricum non minus necessarium est ad pingendum aedificium, quam ad ipsum ex materia solidâ extruendum, ut alibi monuimus.

The Ninety-sixth Figure.

Other Preparations to the Ninety-eighth and Ninety-ninth Figures.



In this Figure, which consists of three parts, the first represents the Geometrical Elevation of the Right-side of the Nave above the Cornice, and of the Design painted in the Vault. The second contains the great Arch of the Vault, and the Geometrical Elevation of the Front of the said Design. The third part shews the Plan of the whole Work painted on the Vault, the Extent and Disposition of which is the same with that of the Nave, as beforementioned. The Geometrical Plan, as I have formerly hinted, is no less necessary for the painting a Design in Perspective, than it is for raising a Structure with solid Materials.

FIG. XCVI.

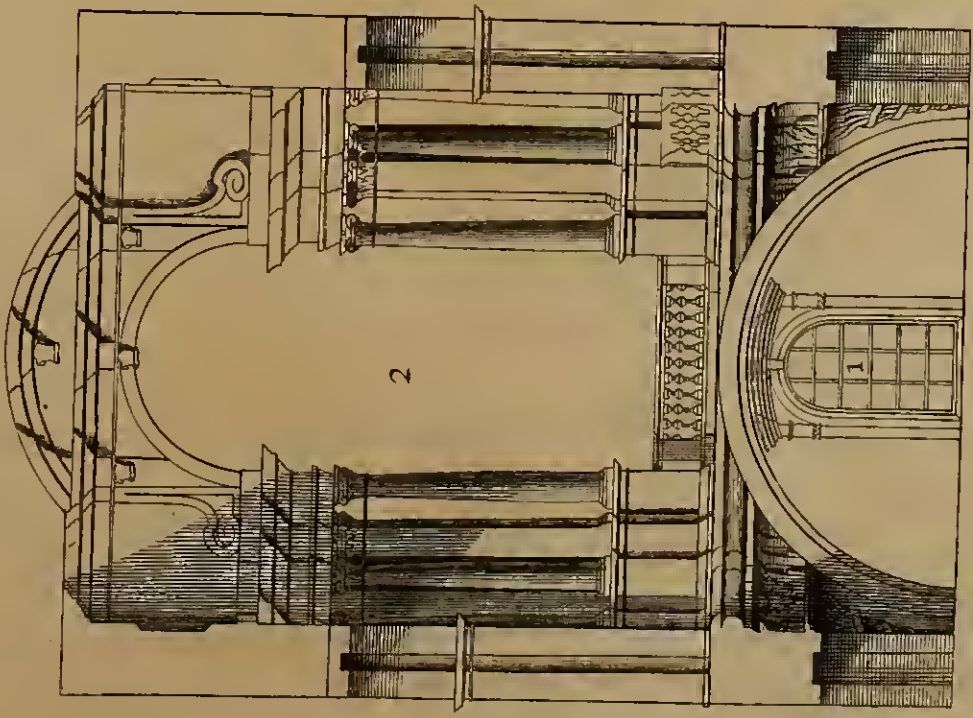
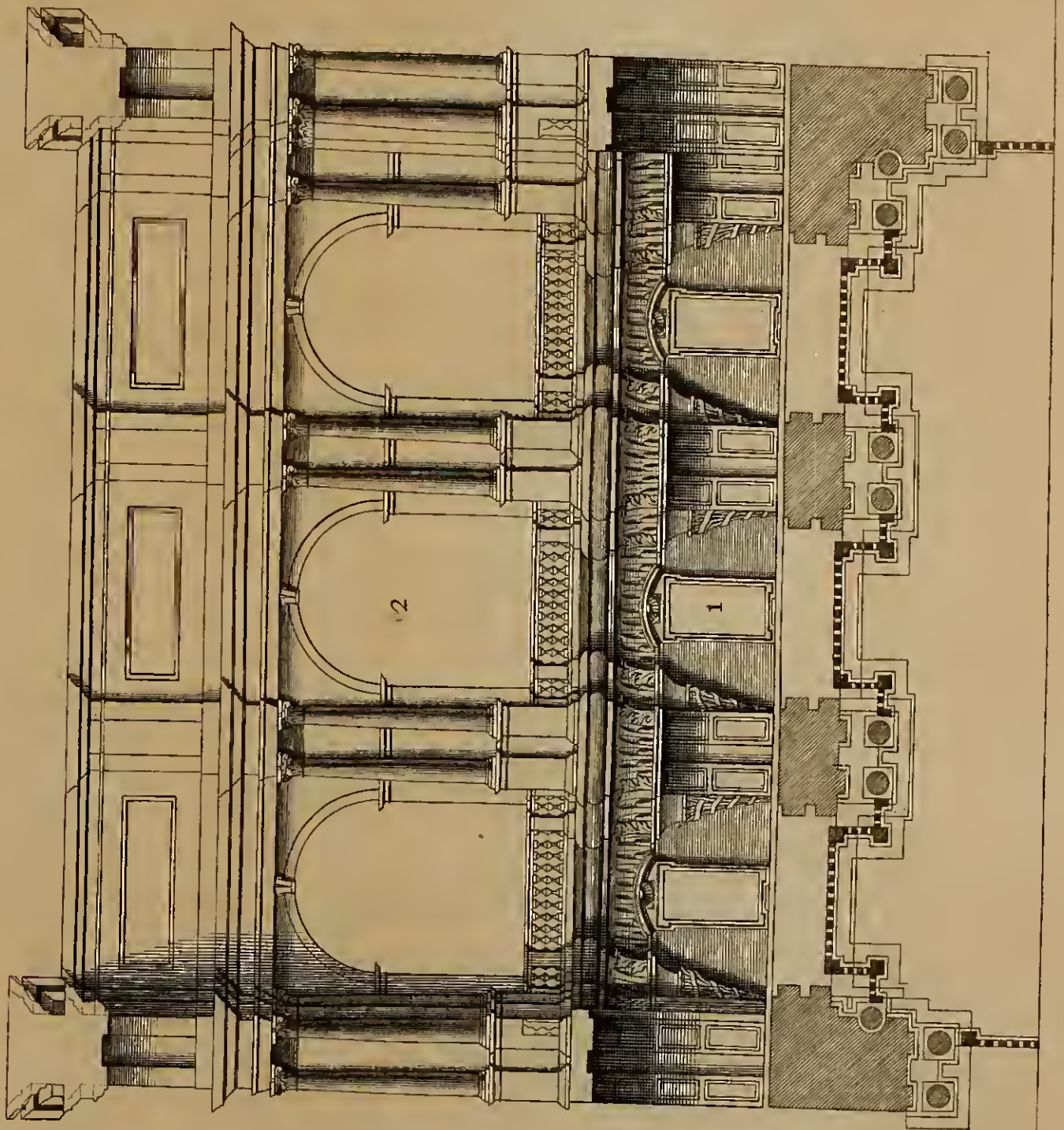


FIG. XC VII.

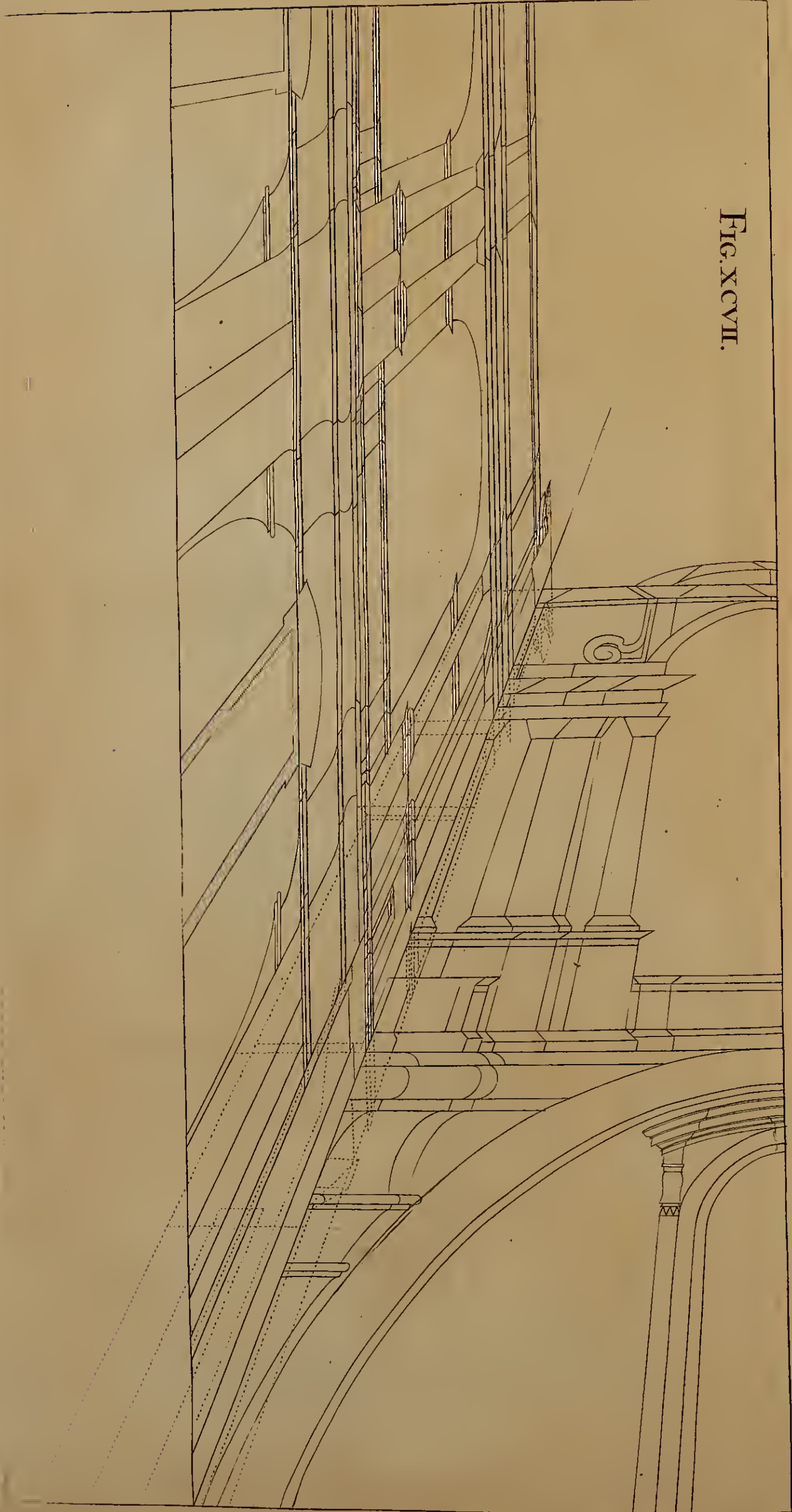


Figura Nonages. septima.

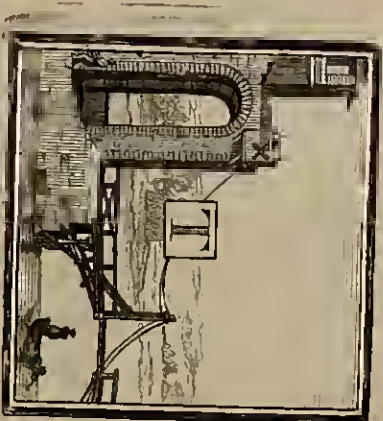
Alia præparatio ad figuras nonagesimam-
octavam & nonagesimanonam.



*T*optica projectio vestigii & elevationis quarta partis totius Operis distinctior evaderet, mensuras partium singularum quadruplicavi, eandemque methodum in hac delineatione tenui, quæ figuris octogesimæ sextâ, octogesimæ septimâ, octogesimæ octavâ, & octogesimanonâ, explicata fuit. Punctum oculi positum est in medio navis Ecclesiæ; punctum distantie est in lineâ ex quâ incipit arcus testudinis.

Ninety-seventh Figure.

Another Preparation to the Ninety-eighth and Ninety-ninth Figures.



HAT the Perspective of the fourth part of the Plan and Elevation of this Work might be more distinct, I have in this Figure made the Measures of each part four times as big as in the former; and have kept the same Method in this Delineation, as was deliver'd in the Eighty-sixth, Eighty-seventh, Eighty-eighth, and Eighty-ninth Figures foregoing. I have set the Point of Sight in the midst of the Nave of the Church; and the Point of Distance is in the Line from which the Arch of the Vault springs.

Figura Nonages. octava.

Quadrans Architecturæ horizontalis in fornice, cum luminibus & umbris.



ABES in hac paginâ quadrantem totius Operis, modo consueto erutum ex præcedenti: nimirum, cuspidè circumini ex angulis vestigi accipiuntur lineæ perpendicularares; ex angulis verò elevationis desumuntur lineæ parallelae, ac lineæ visuales ad punctum oculi.

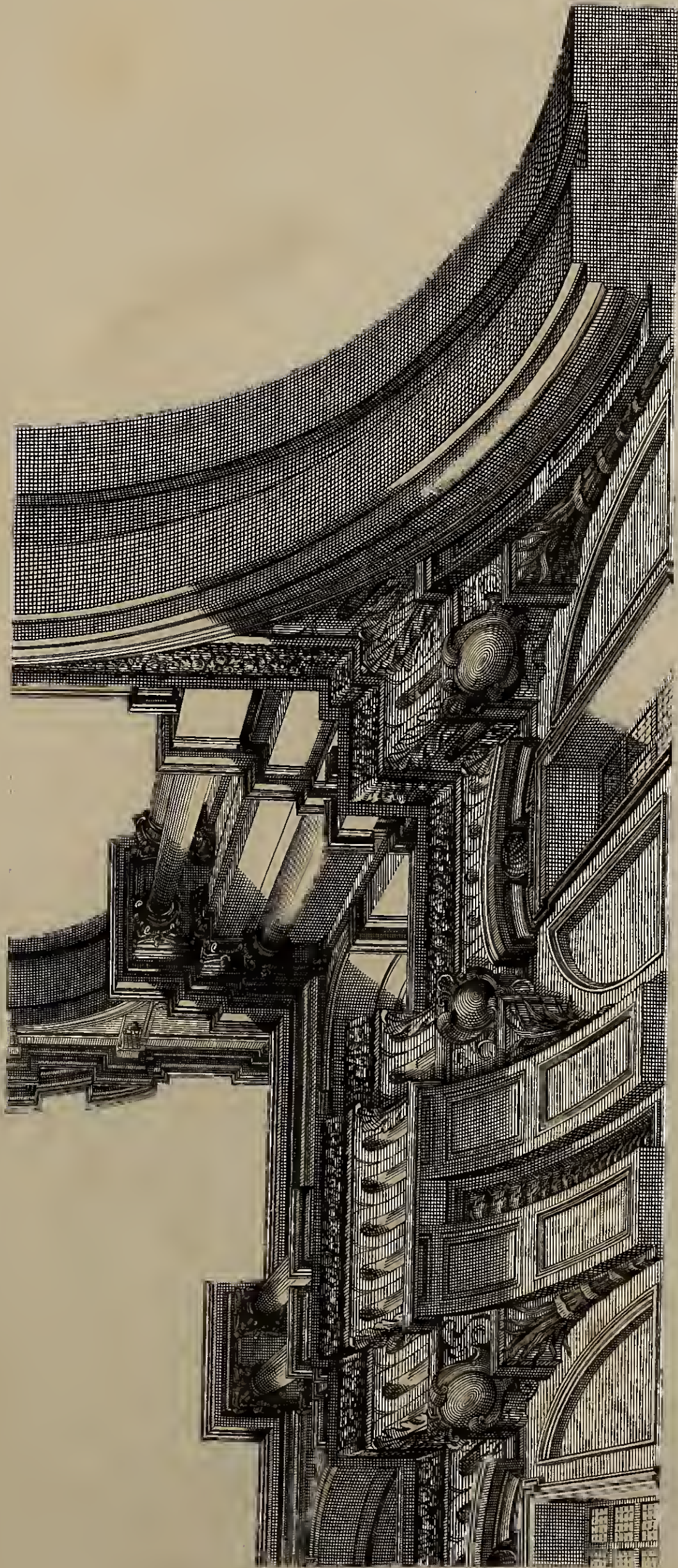
Ninety-eighth Figure.

A fourth Part of the Architectonical Design, painted on the Vault of S. Ignatius's Church; with its Lights and Shadows.



N this Figure you have a Quarter of the whole Work, drawn from the foregoing Figure, after the usual Manner; namely, by taking with the Compasses the perpendicular Lines from the Angles of the Plan; and the parallel Lines from those of the Elevation, as also the visual Lines to the Point of Sight.

FIG. XCVIII.



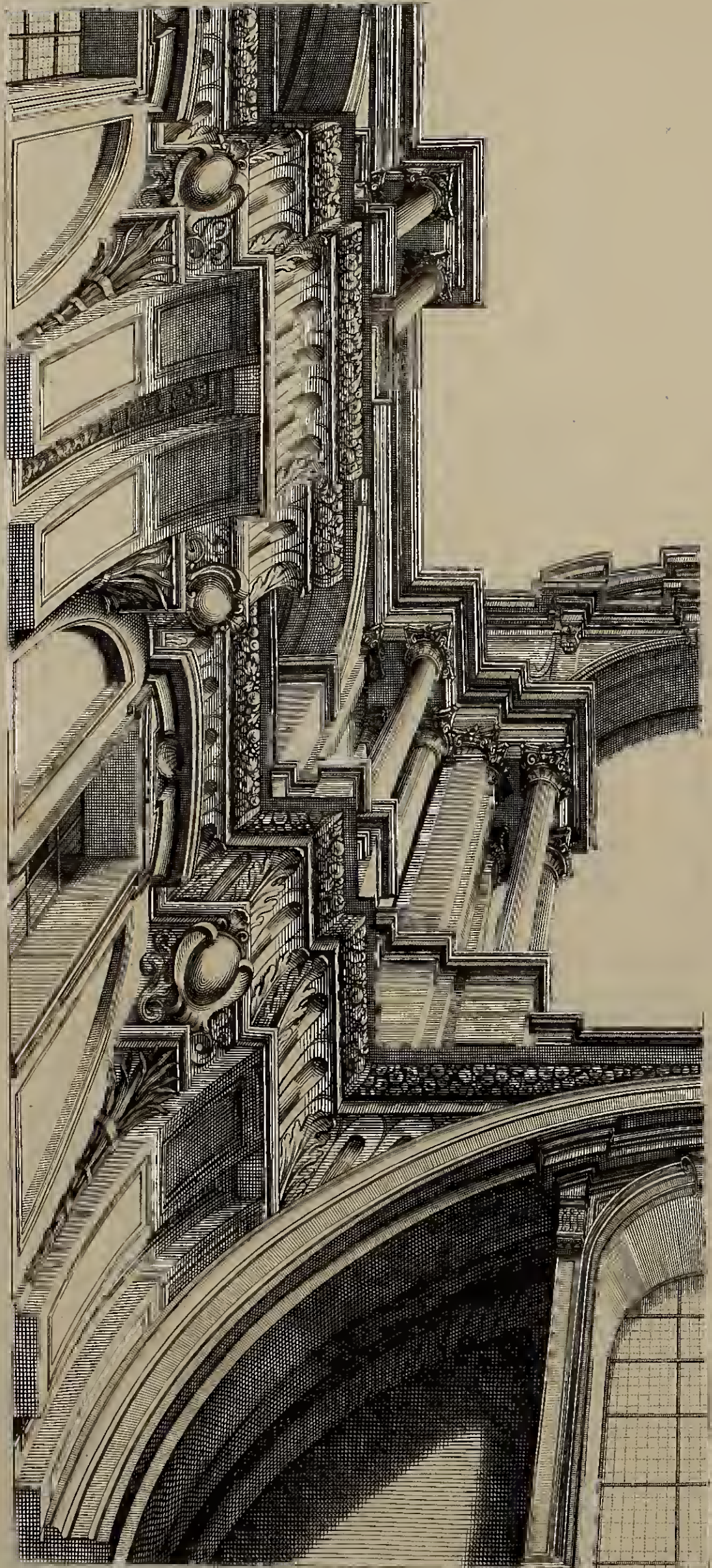
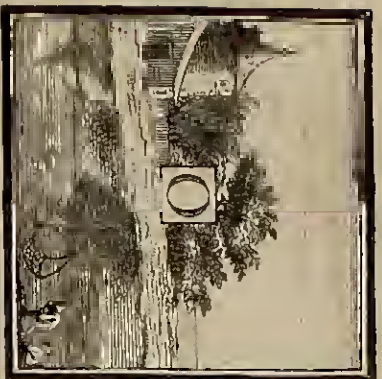


FIG. XCIX,

Figura Nonagesimanona.

Alter quadrans totius Operis.



B diversitatem duorum quadrantum, tum in longitudine, tum in luminibus & umbris, seorsim apponendum utrumque censui; ut in eis delineandis omnem difficultatem tibi adimerem.

The Ninety-ninth Figure.

Another Quarter of the whole Design.



Y reason of the Difference of the two Quarters, as well in Length, as in their Lights and Shadows, I resolv'd to describe them separately, that you might find no Difficulty in designing the whole Work.

FIGURA Centesima.

Modus reticulationis faciendæ in testudinibus.



PERA que sunt in planis, contenta sunt duplici reticulatione, ut notum est. Nam una earum fit in exemplari, altera fit in superficie in qua ipsum Opus pingendum est. At verò testudines exigunt tres reticulationes. Prima fit in exemplari, quod supponimus delineatum esse juxta regulas Perspectivæ horizontalis. Secunda reticulatione constat ex funiculis, & est pensilis; cujus formam geometricam habes in M. Locum ubi figendi sunt clavi qui sustineant funiculos, exhibent rectæ AB, EF: optica verò deformatio retis est in N. Punctum oculi est O, distantia est LO. Itaque si imaginæ, tempore nocturno, lumen candele aut lucerne existere in O, atque à reti ex funiculis projecti lineas ambrosas in testudinem, eademque lineæ pennicillo colorentur, habebitur tertia reticulatione ad pingendam testudinem necessaria.

Dixi si imaginæ, quia in testudinem obductam tabulato, ac remotam à reti, & multo magis à lumine, vel projecti nequeunt esse vivida ac distinctæ, ut oportet. Itaque ubi nimia fuerit distantia, figes in O extremitatem filii; eoque usque ad testudinem extenso, uteris veluti radio ac lumine candele, ad notandum umbræ locum. Proderit etiam, ut super tabulato motum filii obsecundes lumine alicujus candele, quod ipsi filo proximè admoveas. Atque his aliisque adminiculis, tuâque inducens super lincis umbræ, ac tertiâ reticulationem absolves. Posses etiam rete ex filiis figi in parvâ distantia à cornice, puta in GH, unde incipit basis ædificii: tunc autem umbræ in fornice sunt magis distinctæ ac visibiles.

Diligentissimè curabis, ne mensura exemplaris discrepent ullatenus à mensuris testudinis: ut rete incidens in angulos, arcus, aut lunulas testudinis, exactè respondeat reti exemplaris. Demum si in vitia que emendari nequeant, incidere nolis; scito, regulas omnes Perspectivæ horizontalis, eque in hominibus aut animalibus, ac in columnis aut coronicibus pingendis, omnino servari oportere.

The Hundredth Figure.

The Method of drawing the Net or Lattice-Work on Vaults.

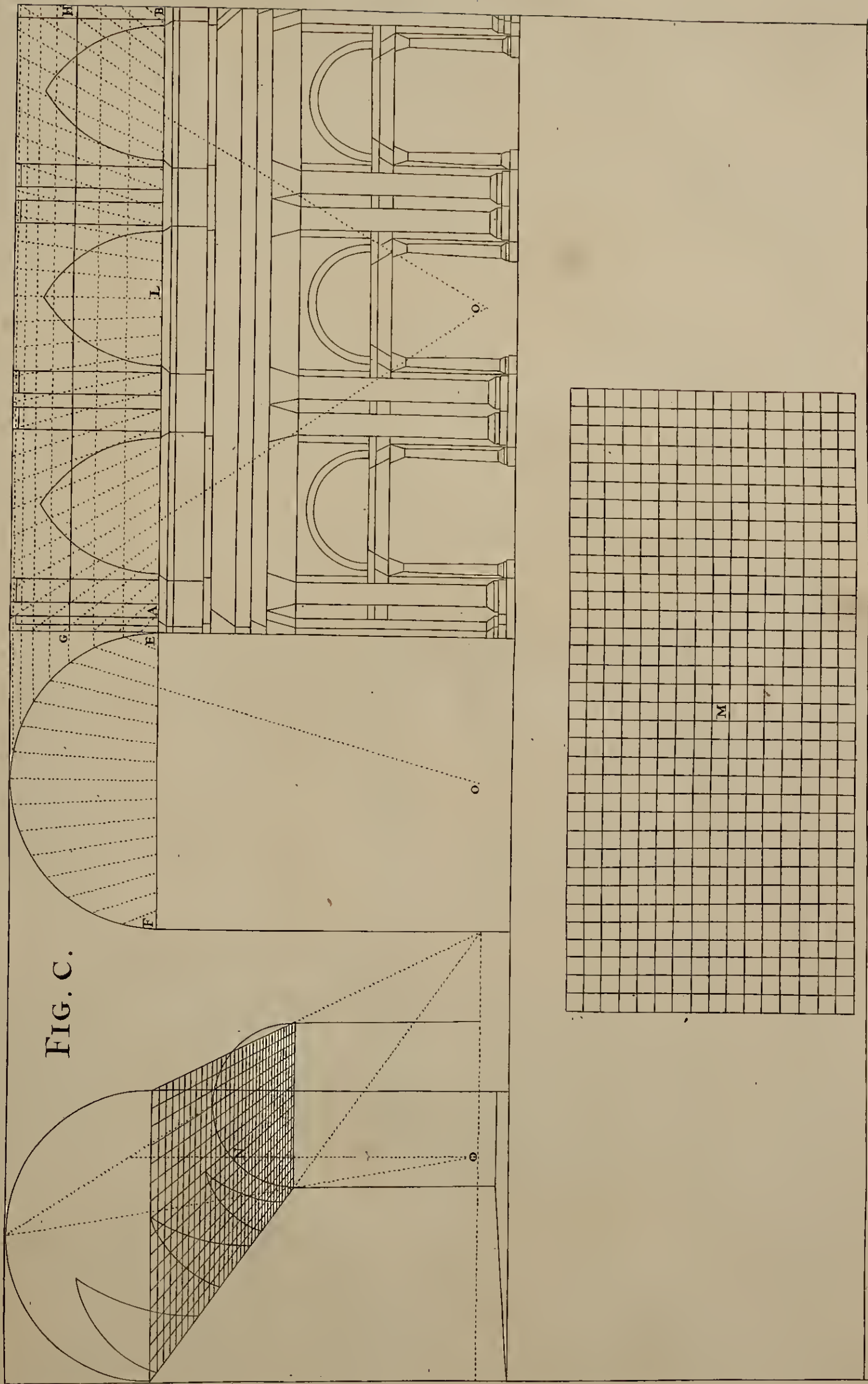


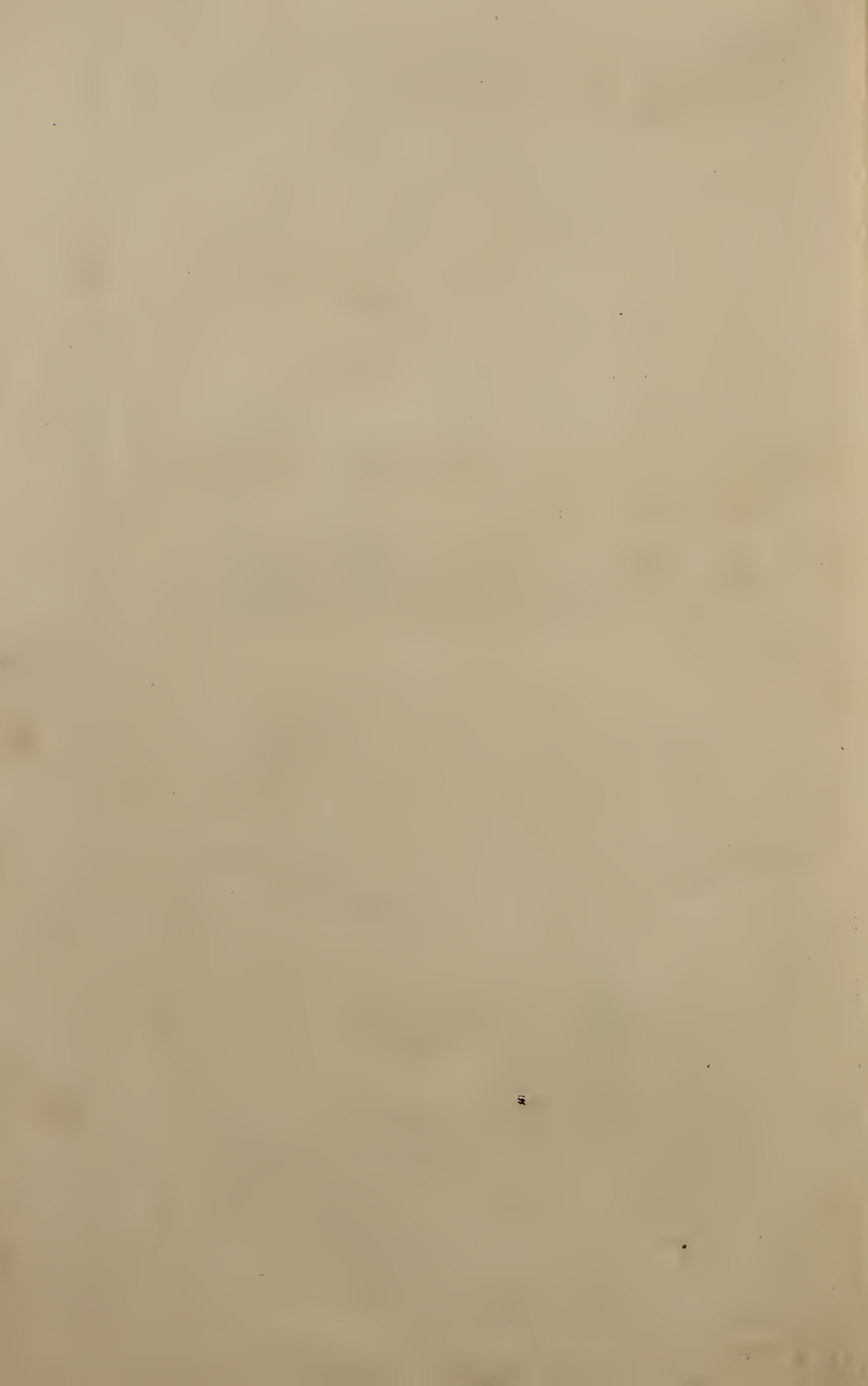
OR Works on a flat Surfaces, two Net-works are sufficient; as has been already intimated: One drawn on the Copy; the other on the Table to be painted. But for arch'd Surfaces, or Vaults, three are requir'd: One made on the Copy, which I suppose drawn according to Rules of horizontal Perspective. The second consists of a Frame of small Cords or Threads, to be hung up; the Geometrical Form of which is M. The Lines AB, EF, shew the Place where this Frame is to be fix'd, in the same manner as the Perspective N. The Point of Sight is O; of Distance, LO. Therefore, if you imagine a Lamp or Candle fix'd in the Point O; the Shadows of the Thread, thrown thereby on the Vault, being trac'd by a Pencil, make the third Net-work requir'd for painting the same.

I say, if you imagine a Lamp thus fix'd; because either the Scaffold to the Vault, or the great Distance of the Vault from the Net-work, or the greater of both from the Light, may prevent the Shadows from being thrown at all, or at least, may render them so faint, as not to be distinct enough for the purpose. Therefore, where this happens, instead of the Light fix one End of a Thread in the Point O; and extending the other to the Vault, make use of it as a Ray from the Lamp or Candle, for describing the Place of the Shadows. It will be also of great use, to second the Motion of the Thread with the Light of a Candle you may have by you on the Scaffold, holding the same near the Thread itself. By this, and other such Helps, which your own Industry will suggest, you may lay these Shadows in Colours, and complete the third Net-work requir'd. The Frame of Threads may also be fix'd nearer the Vault at some Distance above the Cornice, as at GH, where the painted Architecture begins; for the Shadows thrown on the Arch will by that means become more visible and distinct.

You must be very careful, that the Measures of your Copy are exactly the same with those of the Vault, that the Net-work thrown into the Angles, Arches and Lunettes of the Vault, may perfectly correspond with that of your Copy. Lastly, if you would not run into inextricable Errors; assure yourself, that all these Rules of horizontal Perspective are as strictly to be observ'd in the Figures of Men or Animals, as in painting Columns, Cornices, or the like.

FIG. C.





Ut Perspectivæ Tyronibus consulere, qui fortasse non adeo facile percipient duodecim primas figurarum explicationes, totidem novas explicationes hic addo.

For the greater Help to Beginners, and those who are less conversant in the Art of Perspective, I here subjoin a farther Explanation of the first twelve Figures of this Book.

FIGURA PRIMA.

FIRST FIGURE.

Explicatio linearum plani, & horizontis, punctorum oculi, & distantie; de hoc ultimo pressius.

An Explanation of the Lines of the Plan and Horizon, and of the Points of Sight and Distance; but more especially of this last.

TRES lineæ diverſi inter ſe nominis, & muneris, item, & duo puncta præcipuè neceſſaria ſunt, ut delineatio qualibet optice reddi queat: prima vocatur linea plani, ſecunda horizontalis ubi eſt punctum oculi; de tertia loquar in elevationibus: alterum de duobus punctis assignatur oculo, & vulgò dicitur punctum oculi; alterum verò assignatur diſtantiæ, à qua nomen habet. Punctum oculi notiſſimum eſt, punctum verò diſtantiæ non ita; in hujus igitur explicatione morabor, & ut clariùs oſtendam quid ſit, & quomodo formandum ſit, ſelegi deſcriptionem Eccleſiæ geometricè habitam, quam in tres partes diviſi, in veſtigium, ſectionem, & interiorem faciem, in qua facie velit quis pingere, ſeu delineare aliquid optice, ut elongetur ad meſuram aperture quadrati P, ut habes in veſtigio, & ad meſuram profunditatis Q, quam habes in ſectione.

FOR beginning any Deſign in Perspective, there are principally requir'd three Lines, and two Points: One Line where the Feet ſtand, which is call'd the Line of the Plan, or Ground-line: The ſecond where the Eye is plac'd, call'd the horizontal Line: I ſhall ſpeak of the third in the Elevations. Of the Points, one is assign'd to the Eye, the other to the Diſtance. The firſt of theſe is generally known, the latter not ſo well underſtood, though of great Uſe for giving the Removal or Depth of every Object. I ſhall therefore inſiſt a while on the Explanation of the Point of Diſtance; and that I may more clearly ſhew what it is, I have choſen the Geometrical Deſcription of a Church, which is divided into three Parts; viz. the Plan, Profile, and inner Face; in the miſt of which Face one would paint a Piece of Perspective, that ſhould ſeem to recede as much as the Square P in the Plan, and the Depth Q in the Profile.

Super faciem CCCC quam puta eſſe delineamentum, habes rationem, qua debes diſponere ſupradicta puncta, & lineæ. HI erit linea plani: NON erit linea horizontalis, quæ fieri ſolet diſtans à linea plani altitudine hominis, ut vides in B. Punctum oculi erit in O; punctum diſtantiæ erit in N, ex qua parte malueris. Hoc punctum N debet tantum abeſſe à puncto O, quantum tuo arbitratu tu vis procul eſſe ut videas profunditatem illius quadrati PQ, ſicut vides in exemplo veſtigii, & ſectionis; ubi rem velut in ſuo ſtatu naturali exhibeo: in iis enim tam abeſt N ab O, quam abeſt homo ab A ad DE, & homo B in ſectione, ab FG, ubi eſt murus in quo pingendum, vel delineandum eſt.

On the Face CCCC, which ſuppoſe that of the Deſign, you ſee the Manner of diſpoſing the two Lines and the two Points. HI is the Ground-line. NON is the horizontal Line, which is uſually made a Man's Height above the Ground line, as in B. The Point of Sight is O, the Point of Diſtance N, on which ſide you will. This Point N muſt be as far from O, as the Diſtance you determine to place yourſelf at for viewing the Depth of the Square PQ; as is exemplify'd in the Plan and Profile, where you ſee the thing as in its natural Poſition: And in them N is diſtant from O, as far as the Man in A is remov'd from DE; or the Man B in the Profile from FG, which is the Wall to be drawn or painted on.

Si ulterius curioſè deſcriptionem hanc conſideres, videbis quam bene reſpondeat quadratum P in plano, & elevatio Q, ut naturalis ſtatus rei in ſectione Perſpectivæ poſite in facie CCCC, quæ eſt delineatio. Videbis enim viſuales, quæ ſecant in plano ſpatium RS, ita pariter ſecare ſpatium TV in elevatione: & ſegmentum viſualium XZ in ſectione reſpondere YK in elevatione, quod demonſtratione non caret.

If you farther and more ſtrictly examine this Deſcription, you'll diſcern how well the Square of the Plan P, and the Elevation Q, correſpond as if naturally put into Perspective on the Face CCCC, which is the Draught. For you ſee the Viſuals which cut the Space RN in the Plan, cut the ſame Space TV in the Upright; and the Segment of the Viſuals XZ in the Profile, answer that of YK in the Elevation; which needs no Demonſtration.

FIGURA SECUNDA.

SECOND FIGURE.

Quadratum optice delineatum.

A Square in Perspective.

POSTQUAM deſcripſeris in papyro ſeparata quadratum geometricum A, facies duas lineas parallelas inter ſe diſtantes altitudine, quam dederis puncto oculi; linea inferior erit linea plani, linea ſuperior erit linea horizontalis, ſuper quam ponuntur puncta oculi O, & diſtantiæ E, quod ſit ex parte quam mavis: linea diſtantiæ non debet eſſe brevior magnitudine rerum deſcribendarum. Transfer poſtea circino latitudinem quadrati A in CB, unà cum viſualibus ad punctum O; & ſimiliter transfer longitudinem ipſius quadrati in DC, ducens lineam à puncto D ad punctum diſtantiæ E, tranſeuntem per viſualem CO, & ubi illa ſecat, habebis terminum quadrati optici GFCB, ducens parallelam ad lineam plani in F.

AFTER you have drawn, on a ſeparate Paper, the Geometrical Square A, make two parallel Lines as much diſtant one from the other, as you would have the Height of the eye. The under Line is the Plan or Ground-line; the upper Line is that of the Horizon, on which are plac'd the Points of Sight O, and of Diſtance E, on which ſide you pleaſe. The Line of Diſtance ſhould not be ſhorter than the Extent of the thing to be deſcrib'd in Perspective. Then with your Compaſſes ſet the Breadth of the Square A on CB, and draw Viſuals to the Point O; and from the Length of the Square transferr'd into DC, draw a Line from the Point D to the Diſtance E; and where that cuts the Viſual CO, by drawing a Line parallel to GF, you deſcribe the Square in Perspective GFCB.

Ut autem hoc idem citiùs abſolverem, ſæpius chartam complicavi, ut habes in A.

For the more quick Diſpatch of this, I commonly fold the Paper, as you ſee in A.

FIGURA TERTIA.

Rectangulus altera parte oblongior opticè.

QUIDQUID in proximo quadrato vidisti, facies in presenti, transferres latitudinem BC in BC, & longitudinem in CD, ducens latitudinem BC ad punctum oculi O, & longitudinem CD ad punctum distantie E. ubi vero hæc linea secat visuales CO, erit terminus rectanguli supradicti FG, BC, ducens parallelam, ut supra.

FIGURA QUARTA.

Quadratum duplex opticè.

EODEM modo construes quadratum duplex A, transferens circino, aut duplicando chartulam, latitudinem cujuscumque lineæ, ut vides in punctis 1, 2, 3, 4, 5, 6, super lineam plani in iisdem numeris, & ab istis transferes visuales ad punctum O. Postea transfer longitudinem 7, 8, 9, 10, super lineam plani in iisdem pariter numeris, & ab istis duc lineas ad punctum distantie E. Ubi hæc lineæ secant lineam 6, 7, O, sunt lineæ parallele ad lineam plani, & quadratum conficitur; parem constructionem facies de quadrato secundo, & tertio, facillè ex dictis.

FIGURA QUINTA.

Quadratorum vestigia cum elevationibus.

FIGURAM hanc in duas partes divisi; in superiori parte vides tria quadrata optica aliquantulum adumbrata, eaque tam inter se distantia, quanta est distributio super lineam plani. BC erit quadratum primum. Secundum erit in EF. Si ergo posueris longitudinem quadrati in BC, eamque duxeris ad distantiam, secabit in DD visuales AO. Si pariter posueris alterum spatium longitudinis ejusdem quadrati in EF, & duxeris ad lineam distantie, habebis secundum quadratum opticè. Idem facies de tertio, & de aliis, que distribuenda sunt.

In secunda parte. Si desideres supra totidem vestigia formare elevationes cuborum, & stylobatarum, ut in inferiori figura parte vides, satis erit ex omni vestigiorum angulo elevare lineas occultas, & apparentes, determinando altitudinem faciei L primo cubo, & anguli ejusdem faciei dabunt altitudinem omnium aliorum.

Immo etiam totidem cubos formare potes sine lineis occultis, ducendo solum apparentes, ut vides in tribus expressis adumbratis, & nitidis, quorum perpendiculares sumuntur ab angulis vestigiorum, ut in superiori figura habes in H, & lineæ plani translatae sunt ab angulis elevationis, ut videtur in F.

FIGURA SEXTA.

Modus delineandi opticè sine lineis occultis.

DESIDERANS facili methodo figuram hanc exponere, dabo rationem elevandi corpora sine lineis occultis, ut in superiori tetigi; ostendam igitur hic, quomodo quinque cubi adumbrati desumantur ab eorum vestigiis, & elevationibus.

Duas debes facere præparationes, si libeat, in chartis etiam separatis. Prima erit formare geometricè vestigiis, & elevationem, ut vides in B & A. Secunda erit distribuere super lineam plani latitudinem vestigii B, puta in NM, & in duabus proximis: Illius longitudo MX ducta ad distantiam D, secat visuales MO in R. Spatium autem obliquatum E utile etiam est aliis duobus quadratis positis super eandem lineam plani; anguli quorum translati ad distantiam B, totidem angulos dabunt inter visuales NO, MO. Hoc posito, ducens perpendicularem ad angulum N, que in elevationibus geometricis semper necessaria est, eaque tertia linea est, quam supra dixi. Transfer postea altitudinem A in NF, cum visualibus FO, NO, & invenies altitudinem ST. Hoc pariter de cæteris eveniet.

Sciendum superest quomam modo supradicta præparatione uti possis ad construendos stylobatas adumbratos, & inornatos.

Super aliam igitur chartam dispone situm cum duabus lineis, plani scilicet, & horizontalis, una cum puncto oculi O, & perpendiculari V, ejusdem mensuræ cum supradicta præparatione, & faciens uti me fecisse vides. Experire postea circino NF equalia esse 1, 5, & 2, 6. Metire pariter ST, & invenies equalia 7 & 3; facies postea lineas planas, & visuales ad punctum oculi, & habebis planum superius cubi in 1, 2, 3, 4. Hoc idem faciendum est de aliis. Uno verbo: anguli vestigiorum dabunt tibi lineas perpendiculares, & anguli elevationis dabunt lineas planas; atque hæc semper erit.

THIRD FIGURE.

An Oblong Square in Perspective.

WHAT was done in the preceding, repeat in this Third Figure. Transfer the Breadth BC into BC, and the Length into CD, drawing the Breadth BC to the Point of Sight O, and the Length CD to the Point of Distance E. Where this cuts the Visual CO, you terminate the Square FG, BC, by drawing the Parallel, as before.

FOURTH FIGURE.

A double Square in Perspective.

THE double Square A is made after the same manner as the former, by transporting, either with the Compasses, or folded Paper, the Breadth of every Line, as you see the Points 1, 2, 3, 4, 5, 6, on the Ground-line mark'd with the same Numbers; and from these draw Visuals to the Point of Sight. Then transfer the Points of Length 7, 8, 9, 10, into the Ground-line, as you see also in the same Numbers; and direct their Lines to the Point of Distance E. Where these intersect the Visual 6, 7, O, make Parallels to the Ground-line, and the Square is complete. The same is done in describing the middle Square, and that on the other Side.

FIFTH FIGURE.

Several Plans of Squares, with their Elevations.

IHAVE divided this Figure into two Parts; In the uppermost you have three Squares in Perspective a little shadow'd, distant one from another, according to their Distribution on the Ground-line. BC is the first Square; EF the second. If you then set the Length of a Square on BC, and draw Lines to the Point of Distance, they will intersect the Visual AO in DD. In like manner, if you set another Length of the said Square on EF, and draw to the Point of Distance, you'll have the second Square in Perspective. The same you may do in the third, and as many as you have occasion for.

In the second Part you see, that if upon the fore-mention'd Plans the Elevations of Cubes or Pedestals were requir'd, it would suffice to elevate the occult and visible Lines from every Angle of the Plan; and determining the Height of the Face L of the first Cube, the Angles of that Face drawn to the Point of Sight, give the Height of all the others.

You may form the same Cubes without occult Lines, drawing only those that are apparent, as you see in the three Cubes that are finish'd and shadow'd; the Perpendiculars of which are taken with the Compasses from the Angles of the Plan, as is shewn in HI of the upper Figure; and the level Lines are transferr'd from the Angles of the Elevation, as in FG of the same Figure.

SIXTH FIGURE.

The Manner of designing in Perspective without occult Lines.

BEING desirous to make this Rule as easy as possible, I shall give a farther Account of raising Solids without the Help of occult Lines, which I only touch'd upon in the foregoing Figure. I therefore here shew you, how the five shadow'd Cubes of this Figure are taken from their Plans and Elevations.

Two things preparatory are to be done, and, if you please, on separate Papers. The first is, to describe the Geometrical Plan and Elevation, as you see in B and A. The second is, to dispose on the Ground-line the Breadth of the Plan B; as, for Example, in NM, and the two next to it. The Length thereof MX, drawn to the Point of Distance D, cuts the Visual MO in R; and the Foreshortning E serves also for the other two Squares plac'd upon the same Ground-line, whose Angles being directed to the Distance D, give as many Angles on the Visuals NO, MO. This done, erect a Perpendicular on the Angle N, which in Geometrical Elevations is always necessary, and is the third Line mention'd in the first Figure. Then carry the Height A on NF, drawing the Visuals FO, NO, which determine the Height ST, and that of the other Squares.

It remains to be known, how to make use of the foresaid Preparation for the Construction of the shadow'd Pedestals.

On another Paper therefore dispose the Horizontal and Ground-lines, together with the Point of Sight O, and the Perpendicular V, keeping the same Measures as in the aforesaid Preparation, and doing as I have done. You may prove by the Compasses, that NF is equal to 1, 5, and 2, 6. and measuring ST, you'll find it equal to 7, 3. then drawing the level Lines, and the Visuals to the Point of Sight, you have the upper Face of the Cube C in 1, 2, 3, 4. The same must be done in the others. In a word, the Angles of the Plan give you the perpendicular Lines, and the Angles of the Elevation give the level Lines, or those parallel to the Ground-line; and this you are always to understand for the future.

FIGURA SEPTIMA.

Aliud exemplum construendi vestigium geometricum, cum elevatione longitudinis.

VIDES hic stylobatam P in quatuor partes divisum, & adumbratum. Si illum optice delineare velis, construere debes supradictas preparationes, geometricam nempe, & opticam. Nomine geometricæ intelligo vestigium A, & elevationem B; nomine vero optice, totum id quod includitur in G C D E O.

Transfer igitur latitudinem geometricam CD vestigii A super lineam plani pariter CD, & transfer longitudinem DE super lineam plani pariter DE, operans more solito; & habebis vestigium opticæ. Transfer postea elevationem HX in CG perpendicularis; ducens visualem GO, eleva ad lineam GO omnem angulum, quem planum facit in linea CO, & habebis altitudinem necessariam etiam sectionis.

Transeres denique circino in aliam chartam angulos vestigii, qui dabunt tibi lineas perpendiculares, & anguli sectionis dabunt lineas planas: Visuales vero ducet ad punctum oculi.

FIGURA OCTAVA.

Stylobata opticæ.

HIC etiam postquam feceris supradictas preparationes, geometricam scilicet, & opticam; facies præsentem stylobatam adumbratum, transferens circino angulos vestigii, ut construas perpendiculares; & angulos sectionis, ut formes lineas planas, ut supra. Nam sic duo anguli vestigii MO dabunt lineas perpendiculares EF; angulus vestigii R dabit perpendicularem P, & sic reliqui anguli dabunt reliquas lineas perpendiculares. Similiter à sectione angulus I dabit lineam planam HN. Breviter, primus terminus sectionis ID dabit altitudinem linearum planarum in facie stylobatæ adumbrati EFHN. Secundus terminus Q dabit altitudinem faciei oppositæ, & oculi P.

Duo tamen moneo; primum, ut faciens vestigia geometrica, ducas ab elevatione A totidem lineas ad latera vestigii B, quos angulos invenies in prominentiis supradictæ elevationis A, ut manifestè vides in lineis quas ex punctis compositi, illæ enim à stylobata A cadunt super vestigium B; quare prominentia major in elevatione L facit lineam majorem L in vestigio.

Secundum quod moneo sit, ut volens elongare vestigium opticæ delineatum MOR à linea plani K, quantum erit spatium C in eadem linea plani, tantumdem elongabitur spatium G à linea ejusdem plani.

FIGURA NONA.

Opticæ delineatio Architecturæ Jacobi Barozzii: & primum, de stylobata Ordinis Etrusci.

QUANDOQUIDEM omnibus nota est Architectura Barozzii, eam hic penitus immutatam cum suis regulis particularibus, & generalibus expono; Metieris autem illam modulis ut fieri solet; qui igitur illam desiderat, in sequentibus figuris inveniet totam, simulque discet optice reddere. Cum autem non minus Opticæ studio quam Architecturæ necesse sit, efficere delineamenta rei construendæ, ab hoc verè, ab illo fide, id est, cum uterque facere debeat vestigium, elevationem, sectionem, & faciem, ob id delineavi hic stylobatam Ordinis Etrusci cum suo vestigio, quem vides in AB, ut facilius percipias quod in proxima figura dixi, à totidem scilicet angulis prominentiarum elevationis, totidem ducendas esse lineas super lineam vestigii; cum hoc necesse sit ad inveniendum illorum angulorum cum istis lineis concursum in suis degradationibus. Nota, longitudinem, quam voco F ductam in G esse illam, à qua non solum nascitur vestigii obliquitas, verum etiam ab illa nascitur obliquitas illius quam voco sectionem E. Ob id in altero hujus ejusdem figuræ stylobata totum id è contrario videbitur.

Non amplius repetam quoniam modo eruat nitida delineatio, de qua superius pluries; dicam tamen angulos primi termini sectionis E duros lineas planas faciei D, & angulos vestigii duros omnes perpendiculares.

FIGURA DECIMA.

Stylobata Doricus, & ratio vitandi difficultatem quamdam, quæ occurrit inter illum optice delineandum.

HIC oritur difficultas hæc. Vestigium A optice translatum in C aded contrahitur, ut distinctè videri nequeat ubi collocetur circini pes, ut transferri possint perpendiculares stylobatæ adumbrati; totaque hæc difficultas oritur à propinquitate quam habet linea horizontalis, seu punctum oculi cum linea plani. Ut igitur illam vincas: Ducet lineam plani in-

SEVENTH FIGURE.

Another Example of a Geometrical Plan, with the Elevation of its Length.

IF you would delineate in Perspective the Pedestal P, which you here see divided into four Parts, and shadow'd; you must make the two foregoing Preparations; namely, the Geometrical and the Perspective. By the Geometrical, I mean the Plan A, and the Elevation B; By the Perspective, all that's contain'd within G, C, D, E, O.

Then transfer the Geometrical Breadth CD of the Plan A, into CD of the Ground-line; and the Length DE of the said Plan into DE of the Ground-line working after the usual manner; and you will have the Plan in Perspective. Again, set the Elevation HX on CG of the Perpendicular, and drawing the Visual GO, elevate thereto every Angle made by the Plan on the Line CO, and you have all the Heights necessary for the Profile.

Lastly, by the Compasses you transport on a clean Paper the Angles of the Plan, which give the perpendicular Lines; and those of the Profile, which give the level Lines. The Visuals you draw to the Point of Sight.

EIGHTH FIGURE.

A Pedestal in Perspective.

HERE also, after you have made the two foregoing Preparations, the Geometrical and the Perspective; this shadow'd Pedestal is made by taking with the Compasses the Angles of the Plan, for drawing the Perpendiculars, and the Angles of the Profile for the level Lines, as before. Thus the two Angles of the Plan MO, give the perpendicular Lines EF. The Angle of the Plan R, gives the Perpendicular P; and the other Angles give their respective Perpendiculars. So likewise in the Profile, the Angle I gives the level Line HN. In short, the first Outline of the Profile ID gives the Height of the level Lines on the Front of the shadow'd Pedestal. The other Out-line Q gives the Height of the occult and back part thereof.

Nevertheless, two things are to be observ'd; first, that in making the Geometrical Plan, you draw from the Elevation A, as many Lines to the Side of the Plan B, as you have Angles in the Projectures of the said Elevation; as is manifest in the pointed Lines, which fall, from the Upright A, on the Plan B, where that of the greatest Projecture L in the Elevation makes the outer Line L of the Plan.

The second thing to be observ'd, is, That if you would have the Perspective-Plan MOR as far within the Ground-line K, as the Breadth of the Space C on the same Line, the Space G will then be the Distance thereof from the said Ground-line.

NINTH FIGURE.

The Architecture of Vignola put in Perspective; and first, the Pedestal of the Tuscan Order.

SINCE every one is acquainted with Vignola's Architecture, I determine not to alter it, but to explain it, with its general and particular Rules; measuring the same with Modules, after the usual manner. He therefore that has it not, may find it in the following Figures, and at the same time learn the Method of putting it in Perspective. And whereas the Drawing the Plan, Elevation and Profile of what's to be built, is no less necessary for him that studies Perspective, than for the Architect, the first performing in Appearance, what the latter does in Reality; I have therefore here delineated the Tuscan Pedestal, with its Plan, as you see in AB, that you may the better apprehend what I said in the foregoing Figure, That from all the Angles of Projecture in the Elevation, Lines must be let fall on the Plan; this being of absolute necessity for finding the Correspondence of the Angles with the Lines in the Perspective Projection. Observe, that what I always call Length, as from F to G, is that from which proceeds not only the Foreshortning of the Plan; but also that which I call the Profile E. Wherefore, in the opposite Pedestal of the same Figure, you'll see a contrary Disposition of the Whole.

I shall not here repeat, how the finish'd Pedestal is taken from these; having so largely spoken of that before; but briefly tell you, that the Angles of the first Out-line of the Profile E give the level Lines of the Face D, and the Angles of the Plan give all the Perpendiculars.

TENTH FIGURE.

A Dorick Pedestal, with the Manner of shunning a Difficulty, which occurs in putting the same in Perspective.

IN this Figure a Difficulty arises, which is this; That the Plan A put in Perspective in C, is so foreshorten'd, that one can't see distinctly, where to place the Compasses, for transferring the Perpendiculars on the shadow'd Pedestal; which is caus'd by the too near Approach of the horizontal Line to the Ground-line. For avoiding this Difficulty,

ferius

serius quantū libuerit, & super illam fecerit denud latitudinem, & longitudinem more solito, retinendo puncta oculi, & distantie OF, & sic videbis vestigia magis minusve distincta; Vestigium enim E distinctius est vestigio D, & D distinctius est vestigio C.

FIGURA UNDECIMA

Stylobata Ionicus, & ratio vitandi aliam difficultatem in elevationibus.

IN elevationibus etiam sectionis optice potest accidere, ut si visualis LK nimis recta sit, sectio B restringatur. Elongando lineam plani ab L ad M, visualis MN erit inclinatio, & consequenter sectio C erit latior, & distinctior.

Nota, difficultatem hanc sepe sepius te habiturum in figuris precipue, que multas lineas habent, ut in figura quadragesimasecunda, ubi pariter rationem vitandi confusionem reddam.

Neque tibi molestia sim, quod in hac figura lineam horizontalem infra lineam plani collocaverim, id enim feci, ut illarum diversos effectus videas, ut que tu in tuis studiis mutes, & discas.

FIGURA DUODECIMA

Stylobata Corinthius cum suis pilis.

FECISSE septimam figuram magno tibi documento erit ad constructionem, & dividendum stylobatam A, & vestigium B; cum nihil addere debeas præter pilas C cum coronice, que duo latera ambit. Optice hoc vestigium delineabit in D, que delineatio distinctior est, quia inferius duxi lineam plani; & distinctior etiam est sectio E, cum elongaverim visualem FG. Sic semper agam, ut detur locus figuræ adumbrata, & ut etiam videas perpendiculares stylobatæ adumbrati cadere super angulos vestigii, & lineas planas incidere è diametro super angulos sectionis E. Iterum libenter monco, ut facias supradictas præparaciones in chartulis separatis, ut initio assuescas transferendis figuris nitidis circino; facile enim tibi postea erit integras machinas Perspective jucundioris delineare, ut videbis: in hoc enim tota regule hujusce, & totius operis facilitas sita est.

draw another Ground-line as much below the first as you please, and carry the Breadth and Length thereon, after the usual manner, still keeping the same Points of Sight and Distance O and F: And according to the Removal of the Ground-line, the Plans will be more or less distinct; as you see the Plan E is more distinct than D, and D is more so than C.

ELEVENTH FIGURE

The Ionick Pedestal, and the Way to shun another Difficulty in the Elevations.

IN Elevations of the Profile in Perspective, it may sometimes happen, that the Visual LK may be so direct, as to render the Profile B too close and narrow; wherefore prolonging the Ground-line from L to M, make the Visual MN, which being much more oblique, does consequently render the Profile C more broad and distinct.

And observe, that this Difficulty will very often occur; especially in Figures that have many Lines, as the Forty-second Figure has, where I speak also of the manner of avoiding the same.

Nor let it trouble you, that in this Figure I have plac'd the horizontal Line below the Ground-line; which I have done, that you might see their different Effects, and by changing the Disposition of your Designs, improve and learn.

TWELFTH FIGURE

A Corinthian Pedestal, with its Pilasters.

THE Performance of the Seventh Figure will be a great Assistance to you, in the Construction and Division of this Pedestal A, and the Plan B; since you have nothing more to add here, but the Pilasters C, and the Mouldings which surround the two Sides. This Plan is put in Perspective in D, and becomes more distinct by my sinking the Ground-line lower; and the Profile E is also more distinct by the Removal of the Visual FG, as mention'd in the foregoing Chapter. This I shall always do, that there may remain Room for the shadow'd Figure, and that you may also see that the Perpendiculars of the shaded Pedestal fall directly upon the Angles of the Plan, and that the level Lines directly answer the Angles of the Profile E. I repeat my Advice, that you would make the foresaid Preparations on several Papers, and accustom yourself at the beginning to take off the finish'd Figures with the Compasses; for it will become very easy to you afterward, to design entire Machines of delightful Perspectives, as you'll see hereafter. And indeed in this Practice, the Facility of this Rule, and of all that follows in this Work, does chiefly consist.

Respondetur objectioni factæ circa punctum oculi opticum.

Non omnium sensus est, uni optico operi unicum tantum punctum assignare, e. g. toti spatio fornicis, tholi, & tribunæ, quam vocant, expressæ in figura nonagesimatertia, nolunt concedi unicum punctum, volunt concedi plura.



ESPONDEO, objectionem hanc dupliciter intelligi posse: vel enim intelligi posset, non esse assignandum unicum punctum toti illi spatio; atque in hoc sensu vera est; cum enim spatium illud valde oblongum sit, dividi debuit in partes, atque assignanda tribuna, quam dicunt, tholo, & fornici, propria puncta; cum hoc communiter doceant, ubi situs nimium est longus, & parum altus. Vel potest intelligi de qualibet ex dictis partibus, & sic intellecta penitus falsa est. Primo, quia præstantiores fornices aularum, & templorum, qui optico artificio ornati sint, si unicum opus reddunt, à suismet authoribus determinatum idemque unicum punctum accepisse compertum est. Secundo, quia cum ars optica sit mera veri fictio, non id pictor facere potest, ut à qualibet parte simulet veritatem, verum ab uno determinato puncto id ostendit. Tertio, quia si, e. g. fornici, qui uno integroque optico opere ornentur, plura puncta assignaveris, nullum reperies locum, unde integrum opus spectare possis, & ad summum ex quolibet puncto tantum partem illius spectabis, nusquam verò totum opus. Ex dictis igitur rationibus concludo ab inducentibus plura puncta in eodem opere induci malum majus eo, quod unicum punctum inducit; quare hoc omnino necessarium est situi in quo unicum opus formandum sit, ad quod collimare debeant ex omni operis parte figura simul & architectura. Quo posito, negari rationabiliter nequit, à me etiam concedi unicum punctum spectando fornici amplo, aptoque ad representandum unicum opus, qualis est fornix in D. Ignatii templo. Si verò propter situm irregularem, ut dicimus, architectura extra punctum aliquantulum deformetur, & figura pariter operi optico intermixta extra commune punctum aliqualem patientur deformitatem, præterquam quod à supradictis rationibus excusatur, nequaquam id vitio arti est, sed laudis; quandoquidem ars à suo puncto exhibet, proportionem positam, ut rectum, ut planum, ut concavum, id quod tale non est.

An Answer to the Objection made about the Point of Sight in Perspective.

Every one does not approve, that in a Perspective of great Extent one Point of Sight only should be assign'd the whole Work; as for Example, In the whole Length of the Nave, Cupola, and Tribune, express'd in the Ninety-third Figure, they will by no means allow of one single Point, but insist upon several.



ANSWER, This Objection may be understood two ways; either that one Point alone is not sufficient for that whole Length, and in this sense 'tis true; for that Space being very long, it ought to be divided into Parts, and proper Points assign'd to the Tribune, Cupola, and Vault of the Nave; as is commonly taught, where the Situation is of a great Length, and not very high. Or it may be understood of any One of the said Parts, and so is altogether false. First, Because in the Vaults of Halls or Churches painted by the greatest Masters, if they consist of one Piece only, we find but one Point of Sight assign'd. Secondly, Since Perspective is but a Counterfeiting of the Truth, the Painter is not oblig'd to make it appear real when scen from Any part, but from One determinate Point only. Thirdly, Because, if in a Vault, for Example, where you would paint one entire Design of Architecture and Figures, you assign several

Points of Sight, you will find no place whence you may take a perfect View of the Whole, and at best you can only view each Part from its proper Point. From all which Reasons I conclude, that the Introduction of many Points into the same Piece, is more injurious to the Work, than making use of one only: Wherefore 'tis absolutely necessary in a regular Situation, and where the Work is all of a piece, so to place the same, as that the Figures and Architecture may from every part of the Design have respect thereto. This suppos'd, I confess that I myself make use of one Point of Sight only, in very large Vaults that consist of one Design, such as that of the Nave of the Church of S. Ignatius. If therefore through the Irregularity of the Place, the Architecture appear with some Deformity, and the Figures intermix'd therewith seem any thing lame and imperfect when view'd out of the proper Point, besides the Reasons just now given, it's so far from being a Fault, that I look upon it as an Excellency in the Work, that when view'd from the Point determin'd, it appear, with due Proportion, straight, flat, or concave; when in reality it is not so.

I N D E X.

I N S T R U M E N T A paranda,
Explicatio linearum plani & horizontis, ac puncto-
rum oculi & distantie,

Modus delineandi optice quadratum,
Optica delineatio rectanguli, alterâ parte longioris,
Optica descriptio quadrati duplicis,
Vestigia quadratorum cum elevationibus,
Modus optica delineationis absque lineis occultis,

Aliud exemplum vestigii geometrici, cum elevatione lon-
gitudinis,

Optica projectio stylobata,
Optica delineatio Architectura Jacobi Barozzii, & pri-
mum de stylobata Ordinis Etrusci,
Optica deformatio stylobata Dorici; ubi de modo vitandi
confusionem in vestigiis delineandis,
Stylobata Ionici deformatio; ubi de vitanda confusione
in elevationibus,
Deformatio stylobata Corinthii, cum duabus pilis,

Projectio stylobata Ordinis Compositi,

Deformatio circularum,
Optica delineatio columnæ,
Optica projectio basis Etrusca,
Deformatio basis Dorica,
Optica delineatio basis Ionica,
Optica imminutio basis Corinthia,
Basis Atticurga optice imminuta,
Optica imminutio capitelli Etrusci,
Optica projectio capitelli Dorici,
Deformatio capitelli Ionici,
Optica projectio capitelli Corinthii,
Optica descriptio capitelli Compositi,
Deformatio coronicis Etrusca,
Optica delineatio coronicis Dorica,
Preparatio figura sequentis,
Optica projectio adificii Dorici,
Optica projectio adificii Ionici; ubi de modo jungendi fi-
lum cum vero.

Optica projectio coronicis Corinthia, cum capitello &
summitate columna,
Delineatio geometrica coronicis Ordinis Compositi,

Deformatio coronicis Composita,
Preparatio ad figuram trigessimamquintam,
Deformatio coronicis Composita ad latus inspecta,
Preparatio ad figuram trigessimamseptimam,
Deformatio columnæ Etrusca,
Preparatio ad figuram trigessimamnonam,
Deformatio adificii Dorici,
Vestigium geometricum adificii Ordinis Dorici,
Elevatio geometrica adificii Dorici,
Modus vitandi confusionem in contractione vestigiorum
& elevationum,

Contractio vestigii figura quadragesime,
Contractio elevationis figura quadragesimeprime,
Dimidium adificii Dorici optice deformati,
Alterum dimidium ejusdem adificii,
Vestigia adificii Ionici,

Elevatio geometrica adificii Ionici,
Deformatio elevationis adificii Ionici,
Architectura Ionica,

Ordo Corinthius,
Delineatio columnæ spiralis Ordinis Compositi,

Ordines Architectura desumpti ex Palladio & Scamozzio,

FIG.

U T E N S I L S for Drawing.

- I. Explicatio of the Lines of the Plan and Ho-
rizon, and of the Points of the Eye and of
the Distance.
- II. The Manner of delineating a Square in Perspective.
- III. The Delineation of an oblong Square in Perspective.
- IV. The Optical Delineation of a double Square.
- V. Plans of Squares with their Elevations.
- VI. The Manner of designing in Perspective without oc-
cult Lines.
- VII. Another Example of a Geometrical Plan and Upright
put into Perspective.
- VIII. The Projection of a Pedestal in Perspective.
- IX. The Architecture of *Vignola* in Perspective, and first
of his Pedestal of the *Tuscan* Order.
- X. A *Dorick* Pedestal in Perspective, with the Manner
of avoiding Confusion in designing the Plans.
- XI. The *Ionick* Pedestal in Perspective, with the Manner
of avoiding Confusion in Elevations.
- XII. The *Corinthian* Pedestal, with its Pilasters, in Per-
spective.
- XIII. The Projection of a Pedestal of the *Composite* Order.
- XIV. Circles in Perspective.
- XV. A Column in Perspective.
- XVI. The *Tuscan* Base in Perspective.
- XVII. The *Dorick* Base in Perspective.
- XVIII. The *Ionick* Base in Perspective.
- XIX. The *Corinthian* Base in Perspective.
- XX. The *Attick* Base in Perspective.
- XXI. The *Tuscan* Capital in Perspective.
- XXII. The Projection of a *Dorick* Capital in Perspective.
- XXIII. The *Ionick* Capital in Perspective.
- XXIV. The *Corinthian* Capital in Perspective.
- XXV. The *Composite* Capital in Perspective.
- XXVI. The *Tuscan* Entablature in Perspective.
- XXVII. The *Dorick* Entablature in Perspective.
- XXVIII. Preparatory to the following Figure.
- XXIX. A Projection of the *Dorick* Order in Perspective.
- XXX. An *Ionick* Work in Perspective, with the Manner of
reconciling the fictitious to the solid Architecture.
- XXXI. The Optick Projection of a *Corinthian* Cornice, with
the Capital and part of the Column.
- XXXII. The Geometrical Design of a Cornice of the *Compo-
site* Order.
- XXXIII. A *Composite* Cornice in Perspective.
- XXXIV. Preparatory to the Thirty-fifth.
- XXXV. A Side-View of the *Composite* Cornice in Perspective.
- XXXVI. Preparatory to the Thirty-seventh.
- XXXVII. A *Tuscan* Column in Perspective.
- XXXVIII. Preparatory to the Thirty-ninth.
- XXXIX. A Piece of *Dorick* Architecture in Perspective.
- XL. The Geometrical Plan of a Design of the *Doric* Order.
- XLI. The Geometrical Elevation of the foregoing Design.
- XLII. The Manner of avoiding Confusion in reducing Plans
and Elevations into Perspective.
- XLIII. The Plan of the Fortieth Figure in Perspective.
- XLIV. The Elevation of the Forty-first Figure in Perspective.
- XLV. One half of the *Doric* Design in Perspective.
- XLVI. The other half of the same Design.
- XLVII. The Plan of an *Ionick* Building.
- XLVIII. Geometrical Upright of the foregoing *Ionick* Design.
- XLIX. The Elevation of the *Ionick* Design in Perspective.
- L. A Design of *Ionick* Architecture.
- LI. A *Corinthian* Design in Perspective.
- LII. The Description of a wreath'd Column of the *Com-
posite* Order.
- LIII. A. The Orders of Architecture taken from *Palladio* and
Scamozzi.

I N D E X.

Modus triplex delineandi columnas spirales,
Vestigia adificii Ordinis Corinthii,
Elevatio adificii Ordinis Corinthii,
Deformatio vestigiorum & elevationis adificii Corinthii,
Adumbratio figure sequentis,
Adificium Ordinis Corinthii octangulare,
Vestigia Tabernaculi octangularis,
Tabernaculum octangulare,
Modus erigendi machinas qua constant pluribus ordinibus telariorum,
De reticulandis telariis, qua representent adificia solida,
Vestigia adificii quadrati,
Adificium quadratum,
Vestigium adificii rotundi optice imminutum,
Projectio adificii rotundi,
Vestigium geometricum, ac prima preparatio ad figuram septuagesimamprimam,
Elevatio geometrica vestigii precedentis, & secunda preparatio ad figuram septuagesimamprimam,
Deformatio vestigii figure sexagesimaseptima, & preparatio tertia ad figuram septuagesimamprimam,
Deformatio elevationis figure sexagesimoctava, & preparatio quarta ad figuram septuagesimamprimam,
Theatrum representans nuptias Cana Galilee, constructum Rome anno 1685, in expositione Ven. Sacramenti, in templo Farnesiano Societatis Jesu,
De theatris scenicis,
Aliud vestigium theatri; ubi de modo inveniendi ejus punctum,
 Sectio scenarum theatri,
Elevatio scenarum coram inspectarum; ubi docetur artificium, ut scena obliqua apparent recta,
Modus delineandi exemplar scenarum,
Modus reticulandi & pingendi scenas theatri,

De projectionibus horizontalibus,
Projectiones vestigii & elevationis mutuli,
Horizontalis projectio mutuli inumbrati,
Stylobata Corinthii horizontaliter contracti,
Columna Corinthia horizontaliter deformata,
Capitella Corinthia horizontaliter contracta,
Coronix Corinthia,
Coronix Corinthia horizontaliter contracta,
Horizontalis projectio columnae,
Preparatio necessaria ad sequentem figuram, & ad projectiones horizontales in laquearibus vel testudinibus,

Horizontalis projectio balustiorum figura octogesimaseptima, cum brevi distantia,
Horizontalis projectio Architecturae in laqueari quadrato,
Horizontalis projectio tholi,
Tholus figura nonagesima, cum luminibus & umbris,
Tholus octangularis,
Vestigium templi Ludovisiani S Ignatii almae urbis,
Orthographia templi Ludovisiani,
Aliae preparationes ad figuras 98 & 99,
Aliae preparationes ad figuras 98 & 99,
Alia preparatio ad figuras 98 & 99,
Quadrans Architecturae horizontalis in fornice, cum luminibus & umbris,
Alter quadrans totius operis,
Modus reticulationis faciendae in testudinibus,

- FIG.
 LIII. B. Three different ways of delineating wreath'd Columns.
 LIV. The Plan of a Design of the *Corinthian* Order.
 LV. The Geometrical Elevation of a *Corinthian* Work.
 LVI. The Perspective-Plans and Upright of the *Corinthian* Design foregoing.
 LVII. The rough Draught of the following Figure.
 LVIII. Part of an Octangular Work of the *Corinthian* Order.
 LIX. The Plans of an Octangular Tabernacle.
 LX. An Octangular Tabernacle in Perspective.
 LXI. The Manner of erecting Machines that consist of several Ranges of Frames.
 LXII. Of making the Net-work on Frames, for representing the Architecture as solid.
 LXIII. The Plan of a square Design.
 LXIV. A square Design in Perspective.
 LXXV. The Plan of a Circular Work in Perspective.
 LXVI. A Circular Design in Perspective.
 LXXVII. The Geometrical Plan, and first Preparation to the Seventy-first Figure.
 LXXVIII. The Geometrical Elevation of the foregoing Plan, and second Preparation to the Seventy-first Figure.
 LXXIX. The Plan of the Sixty-seventh Figure in Perspective, and third Preparation to the Seventy-first Figure.
 LXXX. The Perspective of the Elevation of the Sixty-eighth Figure, and fourth Preparation to the Seventy-first.
 LXXXI. A Theater representing the Marriage of *Cana* in *Galilee*, erected in the Jesuits Church at *Rome*, 1685, for the Solemnity of exposing the Holy Sacrament.
 LXXXII. Of Scenes for the Stage.
 LXXXIII. Another Plan of a Theater, with the Method of finding the Point of Sight therein.
 LXXXIV. The Section or Profile of Scenes for Theaters.
 LXXXV. The Elevation of Scenes in Front, and how the oblique Scenes are made to appear direct.
 LXXXVI. The Manner of delineating the Designs of Scenes.
 LXXXVII. The Manner of making the Net-work or Squares, and painting the Scenes of Theaters.
 LXXXVIII. Of horizontal Projections.
 LXXXIX. The Plan and Elevation of a Corbel in Perspective.
 LXXX. The horizontal Projection of a shaded Corbel.
 LXXXI. *Corinthian* Pedestals in an horizontal Perspective.
 LXXXII. A *Corinthian* Column in horizontal Perspective.
 LXXXIII. A *Corinthian* Capital in horizontal Perspective.
 LXXXIV. A *Corinthian* Cornice.
 LXXXV. A *Corinthian* Cornice in horizontal Perspective.
 LXXXVI. A Column in horizontal Perspective.
 LXXXVII. The Preparation necessary to the following Figure, and to all other horizontal Perspectives, whether on flat or vaulted Ceilings.
 LXXXVIII. The horizontal Projection of the Balustrade of the Eighty-seventh Figure, view'd at a small Distance.
 LXXXIX. A horizontal Piece of Architecture in a square Ceiling.
 XC. A Cupola in horizontal Perspective.
 XCI. The Cupola of Fig. 90, with its Lights and Shades.
 XCII. An Octangular Cupola.
 XCIII. The Geometrical Plan of *S. Ignatius's* Church at *Rome*.
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